

Railway Age

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June 6, 1931

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On the Stockton Division Train Railroad is a forty-mile Control, single-tracked stretch over which roll millions' worth of fruit every year. The traffic is seasonal. Besides, it has its daily peak of a few hours. To double track the stretch to meet the requirements of the fruit shippers would have entailed an expenditure of \$2,500,000. So the railway company decided to speed up signaling and dispatching to save some of the time lost in side-tracking trains. Under the new system a symbolic reproduction of the stretch to be controlled is mounted in a central office. Lights glow and die on a board. They mark the progress of trains traveling in opposite directions on a single track. The switchboard operator is both signalman and dispatcher. From his office, without ever seeing the track, he opens and closes circuits, sets signals for the locomotive engineers and throws switches to shunt trains into sidings. Beneath a glass panel of his desk is a machine which automatically records the progress of trains minute by minute and marks the exact points where they have been side-tracked—a permanent record that takes the place of the usual train sheet. The net result of the animated chart of lights and the record is a 30 per cent increase in traffic.

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Opposition to Truck Regulation

The National Automobile Chamber of Commerce has filed with the Interstate Commerce Commission a memorandum opposing "the imposition of more rigid governmental control over common carrier truck operation." It does not oppose the regulation of interstate buses, but doubts its success. Regulation of trucks is opposed upon the grounds that "governmental interference with private business should not be extended," and that truck regulation is not desired by and would not be in the interest of shippers or the general public.

The interests of the railroads, of manufacturers and operators of buses and trucks, of manufacturers of railway equipment and supplies, and of shippers are incidentally involved; but the real issue is as to the interest of the public. The interest of the public is to have each class of traffic handled by that agency which can handle it the most economically, differences in service considered, and to avoid all unfair discriminations in service and rates. At present the cost of railway transportation is paid by the public entirely in rates, and the cost of highway transportation partly in rates and partly in taxes. It is to the interest of the public to have the cost of all transportation paid entirely in rates. Spokesmen of the motor interests say there is no demand from shippers for highway carriers to be charged more for the use of the highways or for their regulation. Shippers are not the public. They may benefit by a policy resulting in part of the cost of transportation by highway being borne by the taxpayers, and many of them may benefit by unfair discriminations in service or rates by highway carriers; but what benefits some or even all shippers does not necessarily benefit the public. Spokesmen of the motor interests say there is no public sentiment in favor of changes in present government policies regarding highway carriers. Whence, then, comes the demand that already is beginning to cause changes in these policies to be made by state legislatures? Even if there were no public sentiment in favor of such changes, this would not disprove the unsoundness of present policies or the desirability of changes in them.

Why Increase "Governmental Interference?"

The contention of the motor interests that "governmental interference with private business should not

be extended" would be less illogical if highway transportation were any more of a private business than railway transportation, and if the contention were coupled with a demand for a reduction of the prevailing detailed and comprehensive governmental interference with railway transportation. Present government policies aid highway carriers to take traffic from the railways. This is either conducive or contrary to the public interest. If it is conducive to the public interest, no changes in these policies should be made. If it is contrary to the public interest, changes should be made. The railroads are one of the largest and most important of the country's industries. It would be in the public interest for traffic to be taken from them by other agencies of transportation if these other agencies could take it because they were able to render as good service at a lower total cost than the railways, or better service at as low a total cost. It is clearly not in the public interest, however, that the railroads should be injured by having traffic taken from it by other agencies of transportation solely because these other agencies are allowed to use competitive methods that the railways are forbidden by law to use, or because these other agencies are able to make lower rates than the railways, owing to government aid, and regardless of their real efficiency and economy.

Now, what do the railways really ask?

First, that carriers by highway shall fully reimburse the public for what it costs the public, including private motorists, to have them use the highways. Those who oppose this thereby advocate a subsidizing of highway carriers that results in taxation of private motorists and the general public for the benefit of those who travel and ship by highway. Is that in the public interest? Subsidizing of highway carriers also results in the loss to the railways of the earnings from traffic which they could handle at a lower total cost than it can be handled on highways, and tends to destroy the ability of the railways to pay returns upon their securities, to give normal employment to labor, and to make normal purchases from industry. Is that in the public interest? Obviously, it is contrary to the public interest for highway transportation to be subsidized, with the result of both increasing public taxation and undermining the earning capacity of the railroads.

Second, the railways ask for "comparable" regulation of other means of transportation. The motor interests contend in their memorandum that the regulation of highway common carriers would simply enable highway contract carriers to drive out highway common carriers, and that highway contract carriers cannot be regulated. This contention will not bear discussion. The federal constitution empowers Congress to regulate commerce among the states, and undoubtedly Congress can regulate any carrier of interstate commerce.

Should Unfair Discrimination Be Encouraged?

"Reminding the commission that rail regulation had been enacted to protect the shipping public from irregularities and unfair treatment," counsel for the National Automobile Chamber of Commerce declared "that the testimony of shippers indicated clearly the absence of any need for similar protection from highway carriers. Motor truck transportation is subject to the most effective possible regulation—that of sharp competition." It was "sharp competition" between the railways that caused rebating and the other forms of unfair discrimination for the abolition of which the original Act to Regulate Commerce was passed, and there is abundant reason for believing it is resulting in highway carriers today indulging in every form of discrimination that the act forbids the railways to practice. Their freedom to do so gives them an unfair competitive advantage over the railways, and tends to nullify all the regulation of railways that has been adopted to prevent unfair discriminations. The big shipper was benefited at the cost of the little shipper by unfair railroad discriminations. He can now use highway transportation to secure in competition with the small shippers the same unfair advantages that he formerly derived from railroad discriminations. If a revival of these discriminations is in the public interest, why continue to forbid their practice by the railroads? If a revival of their practice by the railways would be contrary to the public interest, then certainly it cannot be shown that their practice on highways owned by the public is conducive to the public welfare, and should be encouraged.

For many years the railways opposed increases of regulation with exactly such arguments as those now made by the manufacturers and operators of buses and trucks. Many of their arguments were sound, but they were ineffective, as is demonstrated by present railway regulation. The railways, under a policy of equal treatment, could hold all but their short haul traffic in competition with any other existing means of land transportation, because they can render service more cheaply, considering all costs, than any other means of land transportation. Most of the traffic they are losing to other carriers is being lost because they are strictly regulated without being subsidized, while other carriers are subsidized without being comparably regulated. If proponents of other means of trans-

portation really do not believe this, why do they oppose equal treatment of all means of transportation? Why do they defend subsidizing and oppose regulation of other means of transportation, while failing to suggest subsidies or reduction of regulation for railways?

The memorandum filed by the National Automobile Chamber of Commerce said that "as one of the most important customers of the railroads," the automobile industry "has no desire to see the latter's great investment unduly imperiled." It is remarkable how many industries and persons there are at present who express themselves as anxious not to see the railroads' great investment imperiled, but who, in their own supposed selfish interest, at a time when many railroads are heading straight for disaster, loudly defend or advocate government policies adapted to helping cause the disaster.

Dry Barges Earn More Than Wet Ones

In some ways General Ashburn's Inland Waterways Corporation achieved remarkable results last year according to its annual report. With a reduced volume of traffic it not only reduced its operating expenses by a greater amount than the revenue it lost, as compared with 1929, but it actually reduced its accumulated deficit by the interest it received from banks on its working capital which had not yet been put to work. In the six years the corporation has been operating it has earned no interest on its investment, which according to its statement amounted to \$23,957,901 at the end of 1930. In fact it had a debit balance at the end of the year of \$443,412. But it did earn during 1930 \$77,895 on bank deposits, in addition to \$7,284 on some loans and notes receivable, out of which it managed to save \$46,336 for net.

With the use of the \$24,000,000 plant and a "natural" highway improved and maintained at an expense of hundreds of millions to the taxpayers the corporation in 1930 carried 1,424,477 tons of freight and earned a net operating income of \$65,177, of which \$46,767 was earned by the federal barge lines and \$18,409 by the Warrior River Terminal Company, not counting \$57,617 of expenses of the Washington office charged to profit and loss. This compares with an operating loss of \$72,798 in 1929.

However, it is on the fiscal side of its operations that General Ashburn's organization really shone. It will be recalled that some years ago Congress authorized an appropriation of \$10,000,000 to increase the capital stock of the corporation to enable it to provide additional facilities and extend its operations to the Illinois and Missouri rivers. Of this stock \$3,000,000 was issued during the last year and sold to the United States Treasury, and \$3,000,000 is still unissued. In 1930 the corporation therefore had on

hand most of this cash for a large part of the year, although it was to be paid out shortly after the close of the year on contractual obligations covering new equipment. And on this money of the taxpayers held in bank, together with some operating funds, the corporation received \$77,895 interest, which is considerably more than the same money is likely to earn after having been invested in barges. In other words, barges under construction on dry land seem to be more profitable than those in the river. Perhaps someone ought to advise General Ashburn to hang them on a hickory limb.

Railways Not Alone in Seeking Higher Rates

In proposing to ask for increases in freight rates where they believe that higher rates will bring greater revenues, while reducing other rates on traffic particularly subject to the competition of other forms of transportation, the railroads are following an example set by no less illustrious a competitor than their Uncle Sam. It will be recalled that while an organization in the War Department is "relieving" the railways of some of their heavy traffic the Postoffice Department has for many years been operating a parcel post business in competition with the railway express service.

Faced with a large deficit, the Postoffice Department some time ago applied to the Interstate Commerce Commission for its consent to a general revision of parcel post rates, designed to increase its revenues by approximately \$15,000,000 a year, the amount which it estimates it has been losing from this class of service. Although parcel post traffic has also shown a falling off since the depression began, it is proposed to increase the rates for the shorter hauls and smaller packages, which are so low that the express company has not attempted to meet them, and to reduce rates on the longer hauls and heavier packages which are in direct competition with express rates, with the expectation of deriving an increase in revenues both ways. It is also proposed to increase the size and weight of parcels eligible for transportation by parcel post, bringing the department into still greater competition with the express company.

As is the case with railway rates these changes must, under the law, be approved by the Interstate Commerce Commission before they can become effective, and the National Industrial Traffic League and other organizations of shippers are vigorously opposing the increases, while saying little about the reductions proposed. The Railway Express Agency is opposing those, and it has also objected to the request of the Postoffice Department, made since the opposition to the increased rates manifested itself at the hearings before the commission, that the commission expedite that part of the case involving the increase in size and weight limits, which is not opposed by shippers.

In some respects, however, the Postoffice Department has indicated an expectation of being accorded by the rate tribunal a treatment somewhat different from that to which the railways are accustomed. When the protestants assumed a questioning attitude toward the department's cost ascertainment in which the deficit from parcel post operations is estimated on the basis of an apportionment of costs between the different classes of postal service, the department's counsel, an assistant to the Attorney General, filed a brief arguing that, as the cost ascertainment had been authorized by Congress, it should be accepted by the commission as correct and that it should not be subjected to attack or even cross-examination by the shippers. He also objected to the time asked by the latter for an examination of the cost ascertainment study and for an opportunity to show by a study of their own that the parcel post was being conducted at a profit. And at the hearing he objected to a request for certain data in the possession of the department that was desired by the shippers, on the ground that it would involve an expense for the department to help the case of its opponents.

It is understood that the department's plans for increasing its revenues through a rate revision were discussed at the recent conference which President Hoover held with department officials at his Rapidan river camp as to ways and means of reducing the Postoffice deficit, which is only a part of a billion-dollar deficit faced by the federal government. If someone should happen to call his attention to the analogy between the department's plans and those being considered by the railways, it might increase the Administration's understanding of the railway situation.

Construction Costs Are Much Lower

It is possible that some who read the article on decreased costs of construction in the *Railway Age* will place it under the heading of academic dissertations. To them, discussions of low construction costs at a time when little money is being spent are beside the point.

Activity in railway construction has always followed the cycles of business, with the result that most intensive and extensive developments have been prosecuted during periods of high construction costs when lines were congested with traffic which the improvements were designed to alleviate.

This is not merely a matter of psychology—of spending money when money is being earned—but arises primarily from the status of railway earnings. That reduced earnings affect credit is conceded, but few railways are now in so sore a predicament that they can obtain money only at rates which could offset the marked savings to be realized by proceeding with needed construction at this time, when costs are less than at any time, within the last decade.

The Steam Locomotive in America's Railroad Progress*

A survey of ten years' development in motive power and its economic significance to the railways

By William C. Dickerman

President, American Locomotive Company

A TRUE measure of locomotive performance, so far as capacity is concerned, is found in the tractive force developed at usual operating speeds for the service intended, rather than in maximum tractive force at starting.

The comparison in Plate 11 illustrates admirably this distinction. The earlier locomotive (1920) had a weight on drivers of 245,000 lb. In its curves of performance, shown dotted, the locomotive developed a drawbar pull at starting of 52,000 lb. At 28 miles an hour, which is a good average operating speed for freight service today, the engine developed a drawbar pull of 25,000 lb., with an output of 1,900 hp.

The locomotive of 1929, whose performance is indicated in curves shown solid, developed a drawbar pull at starting of 60,000 lb., or a 15 per cent increase over the earlier locomotive. This was accomplished with an increase of about one per cent in weight on drivers. The 1929 locomotive at 28 miles an hour develops a drawbar pull of 41,000 lb., or 64 per cent more at that speed than the earlier locomotive. It is the drawbar pull at usual operating speed which counts.

Contrast often best tells a story. This locomotive of 1929 is no more powerful at starting than many locomotives built in 1920, or even built many years earlier. However—and this is important for you to remember—the drawbar pull of this locomotive of 1929, throughout an operating range of speed, say from 20 to 40 miles an hour which is present-day practice, represents an immeasurable improvement over these earlier locomotives of higher starting power. Herein lies a major contribution to the sinews of war on our battlefield.

Indeed, I could cite you a design developed as early as 1900 wherein the starting power attained in actual field tests was identical; namely, 60,000 lb. However, if that 31-year-old locomotive were today to be placed in main-line service on modern freight schedules, it would fall by the wayside.

What is the practical application of all of this? Freight schedules in heavy service, making far faster time and without reducing tonnage! How is it you get your apricots so fresh from California, your cantaloupes from the Imperial Valley, your grapefruit from the Lower Rio Grande Valley, your oranges from Florida, your strawberries and early vegetables from Louisiana, your peaches from Georgia, your early asparagus from the Carolinas, and your berries from the Pacific Northwest and New England? Fast freight schedules on heavy trains is the answer. Greater drawbar pull on faster operating schedules is the means.

* Extracts from an address delivered before Princeton University on April 14, 1931, in the Cyrus Fogg Brackett Lectureship in Applied Engineering and Technology.

One of the much discussed and considerably debatable subjects in transportation circles is that of the age of locomotives in service on the quarter of a million miles of railroads in this country. It has been found impossible to secure from any source completely exact information. I have attempted to analyze available information, both from governmental sources and from the railroads themselves.

This study by the American Locomotive Company may be taken as a close approximation. It shows that some 12,000 of the serviceable locomotives in the United States in 1929, or 20 per cent of the total, were ten years old or less; that about 20,000 locomotives, or 35 per cent, were over ten years old and less than twenty, and that some 25,000 locomotives, or 45 per cent, were over twenty years old.

A problem exists for railroad managements in the operation of nearly 50 per cent of their motive power having an age of 20 years or more. It is a problem which, through future replacement by more modern and vastly more efficient motive power, holds opportunity and promise of solution at a time when normal traffic conditions will have been restored.

Correlatively, let me call your attention to the substantial sums that have been spent by railroad managements upon the maintenance and rebuilding of old locomotives. Great economies in maintenance and operation can be realized by the introduction of modern efficient locomotives. In many instances these economies can be attained at no cost to the railroads, because of the fact that the new locomotives through savings will pay for their own first cost, their maintenance and contingent expenses, and at the same time return a handsome profit to the railroads. The capital structure of the common carrier need not be impaired, since the locomotive builders are prepared to handle all financing.

Indeed, it has been proposed that there be developed for and by the railroad managements a budget plan looking toward the gradual elimination of old and obsolete locomotives through a process of annual retirements and annual purchases. Such a plan would result in a more constant demand year by year upon the resources of the locomotive builders and might reasonably be expected to result in a lower cost per locomotive unit.

Looking ahead, herein lies wide opportunity for the experience and genius of builder and railroad management to add mightily to the future sinews of war on the railroad's battlefield.

What Replacement Means

In looking over your roster of distinguished speakers in this Cyrus Fogg Brackett lectureship, I note the names of many leaders in the electric public-utility in-

dustry. Undoubtedly these gentlemen have shown you what obsolescence has meant in the rapid forward march of their industry. How these managements have not hesitated to replace their prime-mover equipment as more efficient apparatus has been developed. The economic analogy holds good in the field of railroad motive power.

Our chart (Plate 15) is an actual example taken from many. It is representative of the application of "applied engineering and technology" (to borrow the subtitle of your lectureship), in securing dollars and cents savings to a well-known railroad through the replacement of older motive power by modern and highly efficient locomotives.

The facts are these: 30 locomotives, which, for convenience, we will designate as Class A, were in freight service on divisions of 101 and 83 miles, respectively; 34 locomotives, which, similarly, we will designate as Class B, were in service on adjacent divisions of 114 and 89 miles, respectively. The problem was to replace these 64 engines by a design of locomotive which would handle no less tonnage on faster schedule and over two divisions combined; namely, 184 and 203 miles, with a performance that would yield sufficient return on the new investment to warrant the replacement of the older motive power.

The design which was developed is such that 50 of the new locomotives, designated for convenience Class C, have more than filled each one of the requirements.

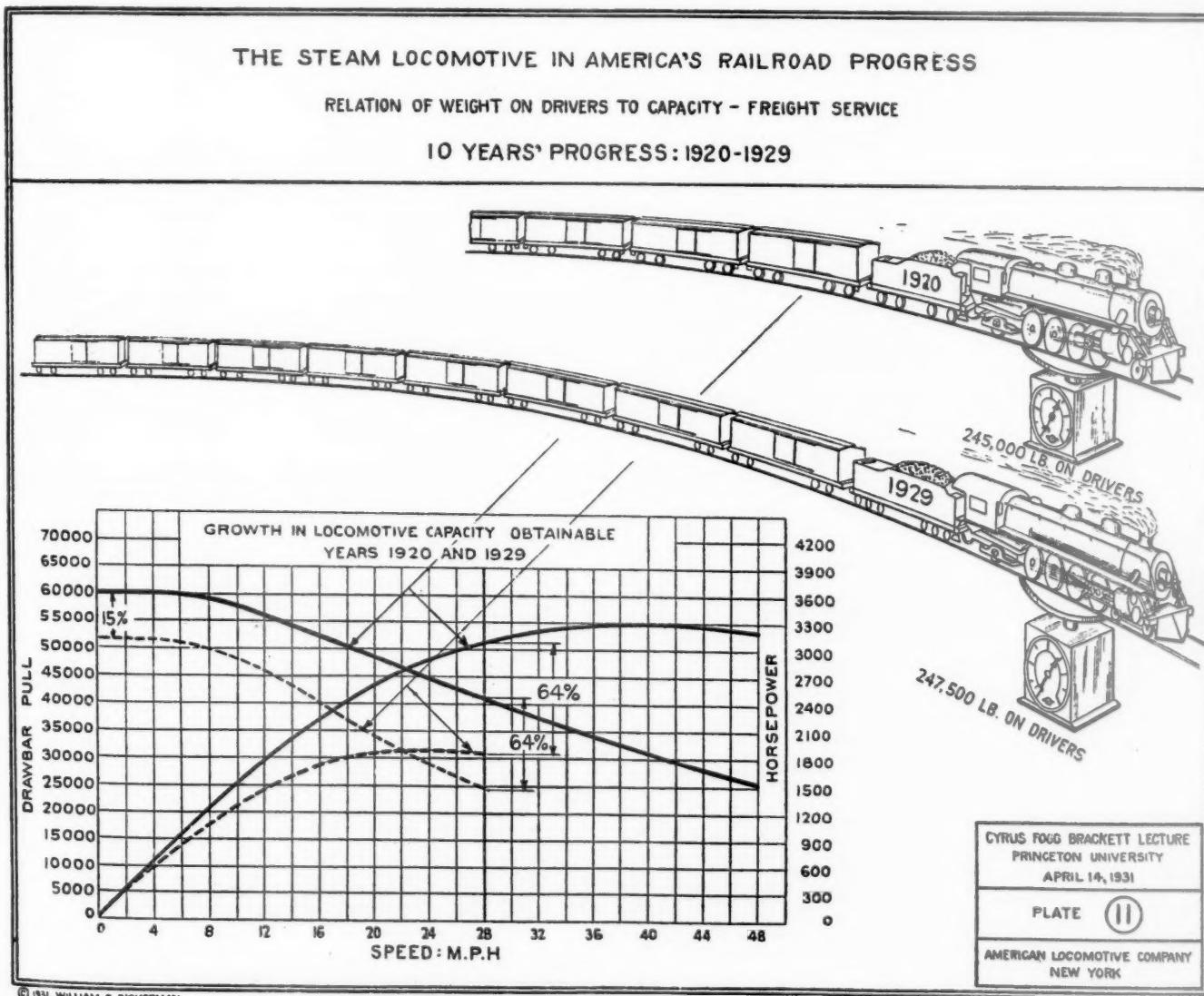
The example combines four vital characteristics which promote better railroading. They are greater power, higher speed, longer engine runs, and reduced fuel consumption. Don't forget that next to wages fuel is the largest single item of expense in operating a railroad.

The chart shows that a 25 per cent saving in transportation expense is possible through the replacement of 64 Class A and Class B locomotives by 50 Class C locomotives. This does not include savings in maintenance and terminal expenses. In these days, or indeed in any other days, a possible saving of 25 per cent in any department of industry is sufficient amply to justify a most careful consideration.

What Determines Locomotive Life?

"Eggs to a Hen" is an informal title which dignifies a discussion indulged in by some members of the railroad fraternity. Its substance is a mild controversy in respect to the relationship between longer engine runs and the probable life of the motive power so operated. You will find divergence of opinion expressed by railroad managements. Some rail executives incline to the view that there are just so many miles of life in a locomotive—just so many "eggs to a hen." Other executives take an altogether different view and are convinced that locomotive life will not be appreciably shortened by longer engine runs provided adequate maintenance is given.

In any event in the final analysis the economic factor



which determines the useful life of a locomotive is obsolescence.

And now we are done in this analysis of ten-years' progress of a distinguished American institution—our railroad transportation system.

Together we have seen the obstacles which railroad management is surmounting in the preservation and constant improvement of a service essential to the continuance of our country. We have seen the contribution which the steam locomotive is making on this field of arms. We have seen that the doorway leading to future possibilities for further contribution is wide open. We have seen that at least half of the serviceable motive power owned by the carriers is of an age which points clearly to opportunity for railroad management to secure progressively greater improvements in the future. We have cited specific examples of the economics involved when older motive power is replaced by modern locomotives designed to meet the given conditions. We have seen that the expense of maintenance of motive power can be reduced through replacement by new units. We have seen a finger pointing to the future which suggests that the elements of transition and flux in the transportation situation in this country may be expected to be crystallized at a not far distant date—when the ultimate criterion of survival will be the economics involved. We have seen that the same finger points to a future in which the emphasis for rail transportation will probably be upon the long haul and the

expedited movement of freight and upon the transport of passengers with an increasing measure of comfort and speed, combined with safety. Again, we have seen that this finger points to a future where the locomotive designer and builder will continue to be an all-important factor in the solution of the technical problems affecting motive power. As in the past, so in the future this technical experience, with its background of research, invention and resourcefulness, may be expected to continue its unrelaxed efforts toward greater efficiency, whether to be secured through super-pressure in steam practice or in refinement of internal-combustion power far beyond anything that commercially has been developed to date.

With such a vista for future opportunity in important public service, you can realize how intriguing is the problem presented to the locomotive industry. Its responsibility towards transportation is, in reality, a responsibility to the country at large not only because transportation is essential to the continuance of the nation's welfare, but because sustained integrity of values in ownership of railroad securities touches the safe deposit box of the American citizen. The locomotive industry confidently meets the challenge of its responsibilities and its opportunities upon the railroads' battlefield.

The subject which we have discussed together has broad significance in the social adjustment of America's

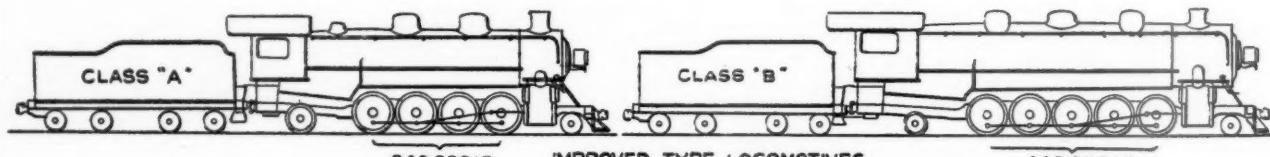
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THE STEAM LOCOMOTIVE IN AMERICA'S RAILROAD PROGRESS

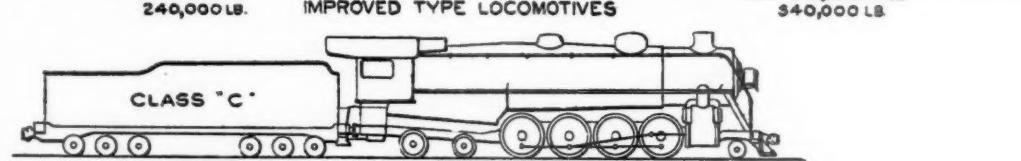
REPRESENTATIVE EXAMPLE OF MODERN LOCOMOTIVE RETURNS

10 YEARS' PROGRESS: 1920-1929

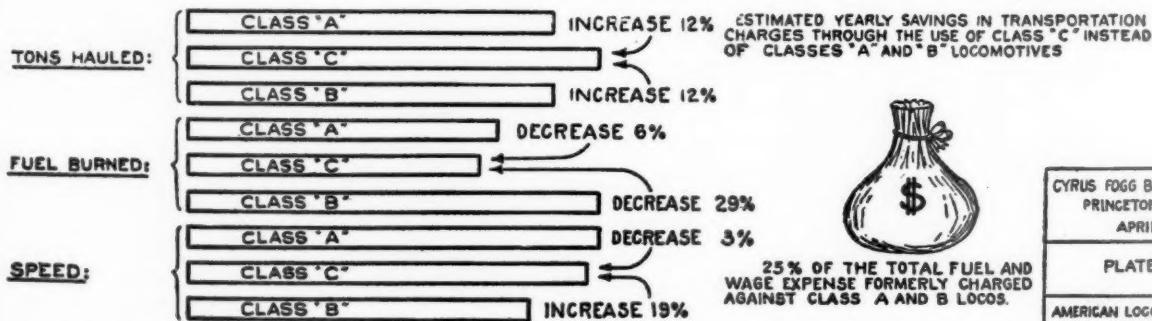
ORIGINAL TYPE LOCOMOTIVES



IMPROVED TYPE LOCOMOTIVES



34 CLASS "B" LOCOMOTIVES	114 MILES	89 MILES	30 CLASS "A" LOCOMOTIVES	101 MILES	83 MILES
30 CLASS "C" LOCOMOTIVES	203 MILES		20 CLASS "C" LOCOMOTIVES	184 MILES	



25% OF THE TOTAL FUEL AND WAGE EXPENSE FORMERLY CHARGED AGAINST CLASS A AND B LOCOS.

CYRUS FOGG BRACKETT LECTURE
PRINCETON UNIVERSITY
APRIL 14, 1931
PLATE 15
AMERICAN LOCOMOTIVE COMPANY
NEW YORK



Architect's Drawing of the New Pennsylvania Station
at Philadelphia, Now Under Way

Pennsylvania Believes Times Right for Making Improvements

Sees necessity for greater efficiency in railroading, with large benefits to the railways, the employees and the public, justifying increased capital expenditures

ON November 19, 1929, the railways of the country, through their representative officers, pledged aid to the president of the United States in carrying forward necessary capital improvements on their properties during the present business depression. That the roads have kept faith with the president and the public, and in many cases have gone far beyond what was believed to be possible at the time, is evidenced in the annual reports of many of the railways and in the statistics for the roads as a whole covering expenditures for capital improvements for 1930 and for the early months in 1931.

An outstanding example of this attitude is afforded by the Pennsylvania. This road, which was in the midst of an extensive program of new construction and improvements when the depression came upon the country in the fall of 1929, has redoubled its efforts in carrying forward its improvement work, with large potential benefit to itself and large immediate benefit to many industries, thousands of skilled and unskilled workmen, and in no small measure to the country in general.

Expressing Confidence in Acts

Following closely upon the expenditure of \$106,000,000 for new construction in 1930, on an extensive program the initial plans for which called for an expenditure of only about \$90,000,000, General Atterbury, president of the Pennsylvania, announced on February 18 that the already ambitious program of improvements planned for 1931 to 1934 inclusive, and involving an estimated expenditure of approximately \$175,000,000,

would be speeded up with the aim of completing it in 2½ years.

In accordance with this announcement, work is being pressed on a number of projects at the present time, while plans and specifications are being prepared and negotiations are under way for many other projects. While the relieving of the unemployment situation and adding a stabilizing factor to business conditions are two of the foremost considerations of the railroad, officers of the road are awake to the fact that many factors having a bearing on new construction and improvement work are more favorable than they have been for a number of years, and possibly more favorable than they will be again for a number of years in the future. Under such favorable conditions, the \$175,000,000 program was decided upon, primarily covering work already started, in order that the railroad might derive the full benefit in the shortest possible time from the facilities under construction.

Several Large Improvements in Program

Continuing its 1930 program, which saw the completion of two large lift span bridges over the Hackensack river at Jersey City, N. J., two new piers in connection with a large rail-to-keel terminal at Jersey City, and a new engine-house and terminal facilities at Philadelphia, Pa.; elimination of numerous grade crossings in projects such as those carried out at Columbus, Ohio, and Chicago; and the completion of electrification work between Trenton, N. J., and Philadelphia, the work for 1931 and plans for the future are now going forward.



Architect's Conception of the New Passenger Station to be Constructed at Newark, N. J.

In the \$175,000,000 improvement program to be consummated in the next $2\frac{1}{2}$ years, there are a number of important projects which, in themselves, will cost between \$1,000,000 and \$15,000,000, in addition to numerous other projects and improvements which will involve expenditures from \$100,000 to \$1,000,000 each. Among the largest projects are the continuation of the work on the extensive passenger terminal improvements in Philadelphia; the construction of a new passenger station with numerous auxiliary improvements at Newark, N. J.; additional trackage and tunnels through Baltimore, Md.; and the continuation of the large program of electrification between New York City and Washington, D. C.

At Philadelphia, with new office buildings, power plant, combination freight and warehouse terminal, engine terminal, coach yards and completely electrified suburban facilities, the main work remaining in the improvement project, which will have cost about \$60,000,000 when completed, includes primarily the construction of a new through passenger station, with the many auxiliary facilities and miles of track changes which this will involve. This new station will be located on the west bank of the Schuylkill river at the foot of a new boulevard beginning at City Hall and extending directly west to the main entrance of the Pennsylvania station. The present new suburban station, known as "Thirty-ninth Street," which was put in service on September 28, 1930, and described in the *Railway Age* for November 15, will form the north wing of the new Pennsylvania station.

According to present plans expenditures approximating \$35,000,000 are still to be made in connection with the station project at West Philadelphia. The station proper will extend over a wide span of tracks. All vehicle traffic to and from the station will be handled on wide streets and wide plazas about the station proper, above the level of the tracks. The new boulevard, to be known as Pennsylvania boulevard, will extend directly from the center of the city to the center of the east plaza of the new structure, crossing the Schuylkill river on an attractive arch masonry bridge, similar to the structure which the railroad has already constructed across the river to carry its electrified suburban trains into and out of Broad Street Suburban station in the heart of the city.

Under the stimulated plan of improvements, this work is going ahead with increased energy, and while the schedule for the West Philadelphia work was already so tight as to preclude advancing the date of completion appreciably, the present finds the foundation work for the station proper nearly completed and

the erection of steelwork getting under way. In addition, miles of track changes are being made, which will ultimately replace the old network of tracks serving the old West Philadelphia station and the approach to Broad Street station.

Improvements Under Way at Newark and Baltimore

At Newark, N. J., extensive improvements are just getting well started which will extend for a distance of approximately four miles and involve expenditures upwards of \$15,000,000. These improvements will include additional main line and rapid transit suburban trackage, three new bridges over the Passaic river, a new and enlarged passenger station at Market street, the main passenger train stop in Newark, and a new station at South street.

The new Market Street station will be located in the block immediately east of the present station. The westerly portion of the station will serve passengers using local and main line Pennsylvania trains, and the easterly portion will serve patrons of the rapid transit line to Jersey City and New York, as well as provide a bus terminal and access to a street car subway terminal, which is to be constructed under a part of the station. Upon the completion of the Newark improvements, all interchange of passengers between the Pennsylvania and the rapid transit trains of the Hudson & Manhattan Railroad to lower New York will be made at the new Market Street station, and with the completion of the electrification between New York and Philadelphia, there will be no necessity for the interchange of steam and electric power.

Plans for the new Market Street station provide for eight through tracks, six of which will be used by Pennsylvania trains and two by rapid transit trains. Seven of the tracks will be elevated, at approximately the level of the three present tracks, and the eighth track will be located about 20 ft. above this level. This upper track will be used by westbound rapid transit trains.

To provide for the extension of the rapid transit service in Newark, which is planned as far as the present South Street station, about a mile west of the Market Street station, two additional tracks will be built along the present right-of-way to a point considerably west of the South Street station. These tracks will require the relocation and widening of a street which now parallels the north side of the right-of-way, and will also require the construction of a new station at South street.

In connection with these extensive improvements, the present two-track approach to Newark over a double-track swing bridge crossing of the Passaic river, will give way to an approach with six tracks, crossing the river on three vertical lift bridges; one to carry three tracks, another, two tracks, and the third, one track. All three lift spans will be 230 ft. in length, center to center of bearings, providing a 200-ft. clear river channel.

The work at Baltimore, plans for which are being pushed so that actual construction can be started at an early date, will involve further expenditures, estimated to be in the neighborhood of \$20,000,000. This work will consist essentially of the construction of two additional tracks through the city to make possible the more expeditious movement of through freight trains and to improve operating conditions generally. It will involve the building of a two-track tunnel, approximately 3,400 ft. long, leading into the city proper from the north, and a second two-track tunnel, approximately 8,100 ft. long, forming the approach to the station area from the south. The new tracks and tunnels will

closely parallel the present two-track main line and tunnels through Baltimore, except that alignment and grades will be improved where possible.

Auxiliary work contemplated at Baltimore includes improvements in the present tunnels leading into the city, certain track changes within the station area to permit the complete segregation of through freight and passenger traffic, the construction of several bridges and viaducts in connection with the separation of rail-highway grades on the line of the new tracks, and the rearrangement and extension of freight yard facilities in the southern part of the city.

Electrification Is Being Pushed

One of the most important phases of the Pennsylvania's program of improvements is its \$100,000,000 program of electrification, which promises to see the complete electrification of the Pennsylvania's line between New York City and Washington, D. C., by the end of 1933. During 1930 the last of the suburban lines out of Philadelphia were electrified, including the main line of the New York division as far as Trenton, giving the Pennsylvania 131 miles of electrified lines and 426 miles of electrified tracks in this territory. Work was also started late in the year on the electrification of that section of the New York division between Sunnyside yards, Long Island, and Manhattan Transfer, wherein an 11,000-volt, a. c. overhead contact system is being installed to replace the present 650-volt, d. c. third-rail system now employed in this territory. Under the stimulated program, this work is expected to be completed in January, 1932.

With the electrification completed out of Philadelphia as far south as Wilmington, Del., and as far east as Trenton, and nearing completion at the New York end, work is going forward in constructing the overhead contact system on that part of the New York division between New Brunswick, N. J., and Manhattan Transfer. Plans are also being prepared for the electrification of the section between New Brunswick and Trenton, as well as for electrification from Wilmington to Washington, and actual construction work is expected to be started soon.

In addition to the large amount of structural steel, concrete, copper and steel cable and other materials which this program will require in the overhead contact system, it will involve the construction of 22 substations and the purchase of from 230 to 260 electric locomotives, passenger and freight, and approximately 100 multiple-unit cars. Only last week orders were placed for the electrical apparatus for 150 of the electric passenger and freight locomotives to be used between New York and Washington, this order alone involving an expenditure of \$16,000,000.

While the foregoing projects are the largest of those definitely scheduled for completion within the next 2½ years, they by no means represent all of the work which is planned for completion in this period, nor do they take into account numerous other projects which will be added to the program as the months pass. Entirely aside from the major projects mentioned, there are about 45 other projects under way on different parts of the road, which involve expenditures of from a few thousand dollars to over half a million dollars each. Among these may be mentioned the construction of a modern perishable produce terminal at Baltimore, and numerous grade crossing elimination projects, including large projects now under way at Swarthmore, Pa., at Canton and Centerbury, Ohio, and at Chicago.

Among improvements of an entirely different character being made on the Pennsylvania is that of heavier

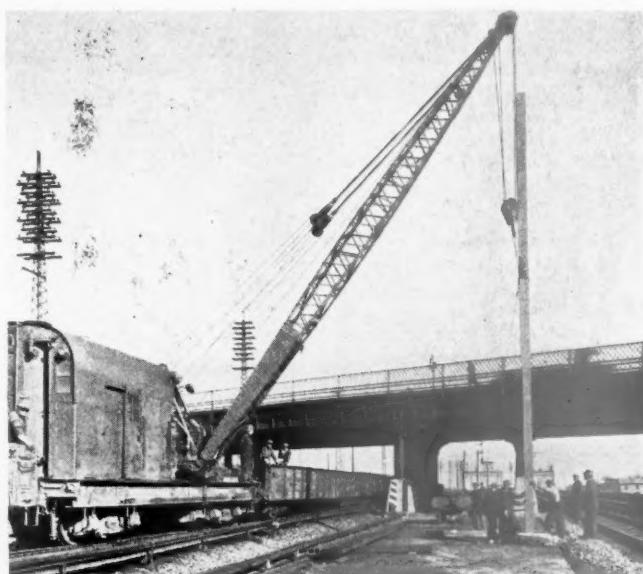
track construction, involving the use of 152-lb. rail, as announced in the *Railway Age* for April 18, together with larger and heavier joint bars and tie plates. Deliveries are now being made on 15,000 tons of the heavier rail, approximately 63 track miles, and the rail is already being laid at points on the heavy traffic lines between Pittsburgh and New York.

Program a Stimulus to the Country

Through the work now under way thousands of men are being given employment, not alone in the immediate work of the Pennsylvania itself, but in many other branches of industry such as the steel, cement, lumber and copper industries, which are supplying the increased needs of the railroad, at a time when business is sorely needed in most cases. Furthermore, the work of the railroad is, in many cases, stimulating large related improvements on the part of the cities involved, and in other cases, improvements on the part of the different states, all of which are adding to unemployment relief and tending toward business stabilization. In Philadelphia, for example, several million dollars will be expended by the city in the next few years in the general improvement of the entire territory in the neighborhood of the new passenger station, this work including the opening of new streets, the widening of others, and the reconstruction of several street bridges over the Schuylkill river in harmony with the attractive arch masonry bridge already constructed by the Pennsylvania. At Newark, the Pennsylvania's work calls for large improvements on the part of the city in the rearrangement and widening of streets and gave impetus to the plan for the construction of a street car subway which will have a terminus under the new Market Street station. At Baltimore, the city will also play a part, primarily in connection with street changes and the separation of track and street grades, all of which will swell the benefits of the work initiated by the railroad.

Railroad Sees Time Opportunity

For several years the Pennsylvania has been clearing the decks for this improvement program and has been building up a favorable financial situation through the issuing of stocks and the reduction of its bonded indebtedness. At the present time, therefore, it finds itself with a strong financial structure, with no heavy



Erecting Catenary Poles on the Pennsylvania in Connection With Electrification Between New York and Washington

maturities until 1936 and with good credit. In this position it is now able to issue bonds instead of stock, and thereby to secure money cheaply. Coupled with this are the favorable conditions in the money market, with low interest rates, the largest gold reserve in the history of the country, and with record savings in the banks and other financial institutions available for investment in increasing amounts as confidence is restored.

Testing the bond market on March 10 of this year, the Pennsylvania offered for sale a new issue of 50-year general mortgage $4\frac{1}{4}$ per cent bonds, to the amount of \$50,000,000. With this money in hand and no major outstanding obligations other than for its present improvements, the Pennsylvania now has ample finances to carry its work forward for the next 12 or 15 months, and is in a position to await the most favorable conditions for its next move.

Many other conditions influenced the Pennsylvania to proceed with its improvement program with increased speed, these combining to make it possible to make definite contracts for improvements on an exceptionally favorable basis. At the beginning of the year material prices generally, including those for iron and steel products, non-ferrous materials and lumber, purchased in sizeable quantities, were off from 2 per cent to 30 per cent and averaged about 10 per cent less than the prices paid in 1929. In several instances the prices were the lowest for a considerable number of years, and recent months have witnessed little, if any, increase. Labor too has been and continues to be plentiful and is at the peak of efficiency. Material deliveries are exceptionally good, while there is a minimum of rail traffic to interfere with and to be interfered with by construction activities. Furthermore, by the Pennsylvania's new policy, large savings will be effected in interest during construction and through the early consumption of many of the projects under way or contemplated, from which increased revenue and large operating economies are expected.

Aggressiveness Marks Pennsylvania's Policy

GROSS revenues of the Pennsylvania for the first four months of the current year totaled \$155,803,293, representing a decrease of 19.8 per cent from the same period in 1930 and of 27.7 per cent from the first four months of 1929. Operating expenses were sharply reduced; nevertheless, with such a de-

Table I—Pennsylvania System—Comparison of Selected Freight Operating Statistics

	1930	1929	Per cent of change
			Inc. Dec.
Mileage operated	10,688	10,738	0.5
Gross ton-miles (thousands)	99,608,598	115,596,005	13.8
Net ton-miles (thousands)	44,481,654	53,580,649	16.9
Freight train-miles (thousands)	42,318	48,947	13.5
Freight locomotive-miles (thousands)	52,903	61,666	14.2
Freight car-miles (thousands)	1,490,549	1,731,732	13.9
Freight train-hours	3,358,216	4,112,340	18.3
Car-miles per day	22.1	25.4	12.9
Net tons per loaded car	29.8	30.9	3.6
Per cent loaded to total car-miles	61.8	63.2	2.2
Net ton-miles per car day	408	496	17.7
Freight cars per train	58.0	57.0	1.8
Gross tons per train	2,354	2,362	0.3
Net tons per train	1,051	1,095	4.0
Train speed, miles per train hr.	12.6	11.9	6.0
Gross ton-miles per train-hour	29,661	28,110	5.5
Net ton-miles per train-hour	13,246	13,029	1.7
Lb. coal per 1,000 gross ton-miles	123	125	1.6
Loco. miles per loco. day	53.7	58.2	7.7
Per cent freight locos. unserviceable	11.7	10.9	7.4
Per cent freight cars unserviceable	4.1	5.2	21.1

cline in gross, an even more marked recession in net railway operating income resulted—the 1931 four month's total of \$13,679,997 being only 46.4 per cent of that of the first third of 1930 and 34.7 per cent of the total for January-April, 1929.

The Pennsylvania Railroad Company proper in 1930 had operating revenues of \$570,465,360 and net railway operating income of \$92,181,557, representing decreases of 16.4 per cent and 30.7 per cent, respectively, from the preceding year. Non-operating income totaled \$55,-

* * * *



Railway Supply Officers and Guests at Atlanta, Ga., May 20

266,677, an increase of 13.3 per cent. Fixed charges—\$78,638,416—were slightly less than two millions greater than in 1929. Net income totaled \$68,809,818, a decrease of 32.1 per cent from the preceding year. This net income, however, was equivalent to \$5.28 per share (par \$50) on outstanding stock, as compared with \$8.82 per share earned in 1929. It will be noted that 1930 income available for fixed charges was 1.88 times such charges.

Net railway operating income in 1930 represented a return of but 3.79 per cent on the property investment. In other words, a return of materially less than 4 per cent upon the legitimate investment in the property was still adequate to yield a net income of 10.55 per cent on the capital stock—so conservatively is the company

The company, then, is under normal conditions a bulwark of financial strength. That its stock should at the present time be selling below par in the market is, therefore, no reflection on the comparative soundness of the property. Rather it reflects the general depression of the times plus the added handicap which all the railroads labor under, of official favoritism to their rivals in combination with the maximum of bureaucratic interference with their affairs.

The Pennsylvania's freight service operating efficiency in a year of depressed traffic is shown in Table I, which gives selected statistics for 1930 as compared with 1929. It will be noted that the decline in train-miles was practically the same as that in gross ton-miles and that locomotive mileage and train-hours

Table II—Pennsylvania Traffic and Earnings, 1923-30

Pennsylvania Regional System *				Pennsylvania R. R. System †				
Mileage Operated	Revenue Tons	Revenue Ton-Miles (thousands)	Average Haul, Miles	Average Receipts per Ton-Mile (cents)	Percentage Freight to Total Operating Revenues	Railway Operating Revenues	Railway Operating Expenses	Net Railway Operating Income
1923 11,087	246,905,248	48,622,873	196.9	1.045	69.0	\$775,254,218	\$633,944,606	\$87,927,078
1924 11,082	215,467,806	41,755,039	193.8	1.067	67.6	698,713,249	560,069,354	84,010,909
1925 11,108	229,509,596	45,025,731	196.2	1.045	68.5	727,678,529	569,944,172	107,792,415
1926 11,117	244,704,115	49,116,691	200.7	1.024	69.5	766,989,363	594,547,708	113,151,122
1927 11,095	223,200,064	45,356,971	203.2	1.030	69.0	721,280,031	554,780,715	110,168,249
1928 10,989	215,371,187	45,171,430	209.7	1.024	69.9	705,067,382	520,622,040	125,138,687
1929 10,738	233,528,274	49,174,162	210.6	0.994	70.4	737,577,104	531,465,849	143,292,338
1930 10,688	191,519,150	41,019,260	214.2	0.980	69.9	616,638,650	459,372,832	99,811,259

* Embraces all transportation companies, except Long Island Railroad and three small companies, and accounts for 94 per cent of system operating revenues. † All transportation companies.

capitalized. The 17.64 per cent per share earnings in 1929 were secured from a return of 5.64 per cent on the property investment—which still fell short of the mythical “fair return” supposed to be permitted to the railroads. The explanation of this lies in the corporate surplus which, with the profit and loss credit balance, at the end of 1930 totaled \$538,974,000, or 82.7 per cent of the par value of outstanding stock—\$651,935,550—which, in turn, exceeded funded debt outstanding by approximately 100 millions. Were the company's 1930 net railway operating income to be halved and its non-operating income to decline by a third, it could still meet its fixed charges.

showed even greater decreases. The number of cars per train was increased and the speed of trains was advanced six per cent, resulting in increases in both gross and net ton-miles per train-hour—a most gratifying result in view of the obvious temptation which all railroads face to run light trains in periods when traffic is scarce and competition extremely keen for all available tonnage. Fuel efficiency also again increased.

Probably the outstanding characteristic of the Pennsylvania's policy at the present time is its obvious courage. The management of the property has seized upon a time of extreme depression as the most opportune

(Continued on page 1114)

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At the Annual Meeting of the Purchases and Stores Division

What Is Fair Competition?*

Views, from the railway standpoint, on the public and transportation problems created by the advent of motor vehicles

By Fitzgerald Hall

Vice-president and general counsel, Nashville, Chattanooga & St. Louis, and

Ray N. Van Doren

Vice-president and general counsel, Chicago & North Western

THIS is a public problem and should be considered and solved solely from that point of view.

To "hamstring" buses and trucks merely to help the railroads would be false economy and bad public policy. To "subsidize" commercial motor vehicles, as is now being done, is just as unsound.

To clarify our viewpoint we submit, more or less as a preface, the following:

1. It is recognized that no character or agency of transportation has a vested right to or interest in public patronage. Each should stand or fall on its own merits under free and equal competitive conditions.

2. All carriers of every kind and description should be judged on their actual merits; taxed for general governmental purposes as nearly as may be in the same relative degree; and regulated as nearly as conditions permit to the same extent and for the same purpose, namely, the promotion of the public interest.

3. It is recognized that the private passenger car, as an agency of transportation, has added much to the pleasure, comfort, health, and welfare of the public.

4. The small privately-owned and privately-operated motor truck fills a definite need, especially in rural communities and on farms.

5. Motor vehicles for hire and large trucks doing a regular intercity and interstate transportation business present a wholly different problem. That many of them furnish excellent service cannot be denied. But whether in general they are economically justifiable, no one now knows because they do not now pay their total actual operating expenses or anything approaching the same. If and when they pay their own way, then, and not until then, can the economic worth of such motor vehicles be intelligently and finally determined.

6. What the public wants, and what it is entitled to, is the most efficient complete transportation service available at the least total cost. What the railroads want is merely equality of treatment and opportunity under the laws of the land.

This, as all other public questions, should be considered and determined in the interest of the public as a whole and not of any one class or any small fraction thereof. A proper decision necessitates the careful consideration of certain fundamental questions, to wit:

(a) Can the public afford to give up its railroads in whole or in part, and if not, why not?

(b) Assuming the railroads to be indispensable, are they in fact in jeopardy, and if so, what are the causes and the remedies?

(c) Is the public in fact paying indirectly any substantial part of the legitimate operating expenses of motor vehicles for hire, and if so, how, to what extent, and why?

(d) Is the public in fact improperly and to a substantial degree bearing the necessary transportation expenses of industry and business, and if so, how and why?

(e) Is transportation by motor vehicle on the public highways as safe as can reasonably be expected and, if not, what

reasonable regulations to that end should be incorporated into the laws of the country?

Railroads Are Indispensable

Motor transportation can no longer be classed as an infant industry, yet such vehicles haul, and can haul, a relatively small proportion of all that is and must be moved. There are inherent limitations in truck operations, and economic factors make it impossible for them to transport for long distances many commodities which the railroads can and do so handle.

Trucks, unlike the railroads, to a large degree select their freight; they haul generally the relatively light but expensive things, leaving to the railroads the transportation of such bulky commodities as coal, brick, pig iron, gravel, fertilizer, and the like, carrying relatively low freight rates. That is, the trucks take the cream of the transportation business, leaving to the railroads that which is the least profitable to handle. This results in a serious reduction in railroad revenues, but such diminution in traffic is not of such character as to admit of a corresponding reduction in railroad expenses. The small communities of the nation must have some railroad service to furnish coal and other general supplies. This expensive local service cannot be maintained at anything like existing charges, if at all, if the cream of the local business goes to the trucks. We believe that there is no disputing the proposition that American industry in general would founder were it not for railroad service, and that for such service as a whole there is no available substitute.

The public—banks, trust companies, insurance companies, corporations and individuals—have purchased for investment nearly nineteen billion dollars of the stocks, bonds and notes of American railroads. To destroy that investment or to even seriously impair it would create a financial panic the like of which this country has never known.

Aside from purely economic considerations, the War Department of the nation considers the existing railroad system in America absolutely indispensable to national security. The railroads are the backbone of national defense.

Railroads Disproportionately Taxed

Motor vehicles for hire, as distinguished from all motor vehicles, pay on the average about 7 cents out of each dollar of gross revenue for taxes of all kinds, including ad valorem, privilege, license, registration, and gasoline taxes. Railroads as a whole pay on the average in taxes more than 6 cents out of each dollar of gross revenue.

Motor vehicles for hire own little tangible property except their rolling stock. They neither buy nor con-

* From a statement presented by Messrs. Hall and Van Doren on behalf of their railways at the annual meeting of the United States Chamber of Commerce in Atlantic City, N. J., on April 29. The statement was concurred in by the Atchison, Topeka & Santa Fe, the Chicago, Milwaukee, St. Paul & Pacific, and the Illinois Central.

demn rights of way, they construct no roadways, bridges or culverts, they maintain no roadways, bridges or culverts, they pay no taxes on roadways, bridges or culverts, they contribute nothing directly to grade crossing separation and protection.

Railroads on the other hand must at their own expense acquire rights of way and construct thereon at their expense the roadway for the movement of their equipment. More than fifty per cent of the total investment of American railroads is in such roadway proper. The railroads must maintain this roadway at their sole expense, and this costs on the average about \$2,700 per mile per annum. In addition, the railroads must and do pay taxes on such roadway, and they must and do pay interest on the money borrowed to finance such roadway. In addition to taxes proper, they contribute over twenty-five millions annually towards grade separation and highway protection projects.

So, to compare fairly the tax burden of motor vehicles for hire and of railroads, that which the respective tax-payers actually receive in return for such taxes must be considered. To obtain governmental protection, plus a roadway including bridges and culverts properly maintained, motor vehicles for hire pay only about seven cents out of each dollar of gross revenue, while the railroads to get exactly the same thing must and do pay approximately 26.5 cents out of each dollar of gross revenue, or about four times as much.

There is no more reason why the public should construct and maintain roadways for motor vehicles for hire than for railroads. It is submitted, therefore, that it is in public interest that those operating motor vehicles for hire should be required to pay all of their own operating expenses, plus their fair share of the cost of government, just as the railroads do.

Land Grants

It has been suggested that the railroads cannot consistently complain because the motor vehicles are being subsidized as the railroads were in the past subsidized through the medium of the so-called "land grants." This clearly involves a *non sequitur*.

Relatively few railroads received any substantial land grants. The phrase "land grants" is a misnomer. As a consideration for such so-called "grants", the national government exacted certain considerations worth about five millions annually. The land-grant railroads have already paid more than such grants were worth and must continue so to pay in perpetuity. It was the best bargain the government ever struck. The value of such so-called grants was negligible compared to the annual subsidy to commercial motor vehicles. Furthermore, such land grants as were made were in the interests of developing the virgin territory of the country. The railroads accepting these land grants had no traffic awaiting them. Communities followed the railroads, and not railroads the communities. In contrast with this, motor vehicles for hire have invaded no new territory, but serve existing flourishing communities, following the beaten trails, and they usually insist that such trails be paved with concrete.

We think that both classes of carriers, motor vehicles and railroads, should each contribute the same relative proportion of taxes proper for general governmental purposes. Then each should, at its own expense, furnish its own roadway or pay a reasonable and fair compensation for the use thereof. But motor vehicles for hire now pay practically nothing to the cost of government and an insufficient sum for the use of the public highways as a place of private gain.

Based on limited studies, but complete in the territories

for which made, it appears that railroad equipment of all kinds (as well as other railroad property) is fully taxed *ad valorem*, whereas very little of the equipment of motor vehicles for hire is so taxed. So, based on the same limited studies, counties, municipalities and special taxing districts, while collecting large taxes from railroads for the purpose of general local government, collect little or nothing from motor vehicles for hire. That is, motor vehicles are in fact largely taxed only through the medium of so-called special taxes.

The automobile interests object to the expenditure of any motor vehicle taxes for the support of general government; they advocate that every cent of so-called "special motor vehicle taxes" be expended on federal and state aid roads for their own use and profit. On the other hand, railroad taxes are used to defray the general cost of government, including roads, schools, the judiciary, courts, and the infinite details of modern government. Suppose the railroads insisted that all their taxes be spent for the construction and maintenance of roadways for their use! All property and every business should pay its fair share to the general expenses of government. This, motor vehicles for hire are not doing and strenuously object to doing.

Spokesmen for motor vehicles frequently make the unfounded assertion that motor vehicle taxes pay the construction and maintenance costs of public highways, bridges and culverts. The figures used by such spokesmen generally apply to all automobiles—the small passenger car, the small truck, the great buses and enormous trucks—but as a matter of fact all together are now paying less than one-half of the nation's annual highway bill, while contributing a mere pittance to the general expense of government.

Motor carriers for hire have not published, so far as we have been able to ascertain, exactly what taxes each pays and for what purposes such taxes are expended. To a large degree they publish and rely on the taxes paid by the owners and operators of all automobiles, including the private passenger car. That this gives an inaccurate basis for study is the more apparent when one considers that the owner of a small light passenger car pays a great deal more gasoline tax per ton-mile for the use of the public highways than do the operators of large buses and trucks. We feel that a very careful study should be made to ascertain exactly what taxes commercial vehicles do in fact pay, how much thereof is used for their own selfish benefit, and how much for schools, police, fire protection and other general public purposes.

Effect of Large Motor Vehicles

So far as we can ascertain, it is accurate to say that approximately 99 per cent of all automobiles of every kind, with load, weigh substantially less than 12,000 lb. Of the 26,501,443 automobiles registered in this country in 1929, less than 3 per cent were operated as public carriers for hire. The average citizen—that is the public—is not interested in owning or operating an enormous motor vehicle. Only a relatively few persons and corporations either use them or get any benefit from their operation.

In the construction of public highways, including, of course, bridges and culverts, provision must be made to take care of the maximum allowable load, regardless of the frequency of its movement. If the highways of the nation, outside of municipalities, were built for about 99 per cent of the motor traffic, the total highway bill could be very much reduced. The public is spending hundreds of millions of dollars per year to provide a roadway for one per cent of the motor vehicles.

The owners of very large buses and trucks pay in gasoline taxes a great deal less per ton-mile than do the owners of small cars, and yet, for their use and benefit, government is spending enormous sums to build roads and bridges strong enough to take care of the enormous peak loads. We feel that those who make necessary this added cost and who are the beneficiaries thereof should, in the public interest, be required to pay for such excess cost.

The public has no funds to spend except those which it collects from the public through the medium of taxation. There is absolutely no reason why commercial motor vehicles using the public highways for private gain should not be required to pay their reasonable proportion of the cost of constructing, maintaining and policing the highways, and especially that excess cost made necessary by the relatively few very large and heavy vehicles.

Under the Transportation Act, no railroad can build or extend any portion of its line without the affirmative approval, after public and formal hearing, of the Interstate Commerce Commission. The governmental principle underlying this statute is that the public must have adequate transportation facilities and that this is impossible if there are too many common carriers. There is only a certain amount of traffic to be handled, and if so many common carriers compete therefor that few or none can make money, inevitably transportation service breaks down, to the disadvantage of the public. There is no similar statute restricting the number of interstate bus and truck lines, and the result—already apparent—is bound to be that, unless this discrimination be corrected by statute, there may be a break-down in both railroad and motor vehicle transportation.

There are hundreds of laws applicable to railroads, practically every one of which requires of railroads very large expenditures of money, such as full-crew laws, hours-of-service laws, safety appliance acts, accounting requirements, publication of tariffs, etc. There are very few similar laws applicable to motor vehicles for hire. We feel that such statutory provisions as now apply to railroads and as are in fact in the public interest should have their counterpart in relation to motor vehicles for hire. If such regulations be wise for one, it must follow they are necessary for the other.

As aforesaid, motor vehicles for hire, for their taxes, receive governmental protection plus a roadway built, maintained and policed at public expense, whereas railroads, for their taxes, receive only governmental protection. This discrimination is unsound and in the public interest should be remedied. Each should pay its just proportion of the cost of government and then each should pay all of its own operating expenses.

There should be reasonable limitations as to size, weight and speed of motor vehicles, to the end that the expenditure of public funds may be reduced as much as reasonably practicable. For the public to pay for highways and bridges strong enough to carry motor vehicles of great weight is unfair to all taxpayers, including the railroads.

The tremendous economic loss growing out of motor vehicle accidents is common knowledge. This is due in large degree to a lack of proper statutory regulation for public safety. There should be reasonable regulation to this end applicable alike to all motor vehicles, public and private, large and small. There should be rigid provisions as to lights, brakes, and other safety devices. The young and incompetent should, under no circumstances, be permitted to drive. A sound system of licensed drivers should be inaugurated and enforced. Length, width, height, weight and the use of

trailers should be carefully and sensibly limited. No one should be permitted to drive a large bus or truck continuously or substantially so for more than 10 in 24 hours. No vehicle, public or private, over 30 ft. in length, or weighing, with load, over 20,000 lb. (except fire-fighting equipment, etc.) should ever be permitted to run in excess of 30 miles an hour, and mechanical devices limiting speed to that maximum should be required by statute.

Such regulations as are here suggested are clearly in the interest of public safety. They have been in effect as to railroads for many years. Presumably they were enacted, as to railroads, in the interest of public safety. They have imposed enormous financial burdens upon the railroads. Thus again does subsidy appear; in this instance a subsidy of governmental inaction, resulting as well, in unfair competition.

What Results?—Suggested Remedies

In no year since 1920 have the American railroads as a whole earned as much as 5 3/4 per cent on the fair value of their property devoted to public use. Since 1924, approximately three thousand miles of railroad track have been abandoned; train service has been sharply curtailed; and approximately three hundred thousand employees have been let out of service.

Long distance trucking has come into general use only in the last two years; yet its disastrous effect is already too apparent. As long as the trucks are permitted to haul only the "cream of the business," railroad net income will continue to decrease. A large proportion of railroad expense is of necessity substantially static—that is, it does not and cannot vary proportionately with the volume of traffic. With the "cream of the business" rapidly going to trucks, railroad expenses can be reduced very little. The result shows up with disastrous effect in net revenues.

Here again does the unfairness of motor vehicle competition appear. Railroads must be operated even though the traffic be light; schedules must reasonably be adhered to. On the other hand, motor trucks for hire operate only when loads are secured, and schedules are determined by traffic conditions. Cars must be furnished at outlying points even though the railroad must transport these cars many miles without load.

It is, of course, true that the general business depression has had its effect on the railroads, but it is believed by students of railroad traffic that the loss, generally speaking, is largely due to competition by motor vehicles and especially the large trucks. The fact is that the number of large trucks is increasing much more rapidly than the number of automobiles generally. A careful survey of traffic to points where there is highway competition and where there is no highway competition discloses the unquestioned fact that there has been little reduction in revenues to noncompetitive points but a drastic reduction to competitive points.

The largest item of railroad expenses, labor, is not subject to the fundamental law of supply and demand, but by federal statutes is maintained on an artificially high plane. Labor in the motor vehicle industry has no such protection. Unless motor carriers for hire are put on substantially the same basis as are railroads in the matters of taxation, wages and general regulation, there is bound to be a material reduction in railroad service and a material increase in railroad freight rates, or both. Neither of these is in the public interest, yet both seem to be inevitable unless prompt statutory relief is accorded the railroads.

What the public should do and what the railroads
(Continued on page 1114)

Swedish Electrification Justified by Operating Results*

Data now available indicates that electric traction is warranted economically under conditions obtaining in Sweden

LECTRIFICATION of the Stockholm-Göteborg line of the Swedish State Railways was decided upon in 1923 and in accordance with estimates was expected to require an expenditure of \$10,450,000 including the purchase of locomotives. Economies, calculated on the basis of the price of \$7.76 per ton (2000 lb.) for coal, were expected to provide a return of 4.5 per cent on the capital investment.

The number of miles run, which was only 1,862,000 in 1922, rose in the following years by 25 per cent, requiring an expenditure of \$3,160,000 for locomotives, so that the expense of installation finally reached \$11,600,000. On the other hand, numerous steam locomotives replaced by electrification were immediately used on other lines, which permitted a deduction of \$1,340,000 from the expenses chargeable to electrification. Under these conditions, even at a price of \$5.84 per ton of coal, the return on the capital will still reach 4.5 per cent, the price of current being 1 cent per kilowatt hour.

Cost of Installation

The electrification was completed in 1926 and includes 285 miles of line between Stockholm and Göteborg. Sixty-eight miles of the line are double track and 217 miles are single track. A single-phase, 16,000 volt, 16 $\frac{2}{3}$ cycle power distribution system is used. The motive

Table I—Distribution of Expenses

Distribution System	Dollars
Sub-stations	3,550,000
Lowering of tracks	1,220,000
Modification of street passages	171,500
Acquisition of property	10,500
Modification of structures	13,400
Dwelling houses	5,400
Modification of low voltage lines	64,200
	965,000
 Rolling Stock:	 6,000,000
Electric locomotives	3,160,000
Electric inspection cars	48,000
Heater cars	212,000
	3,420,000
 Miscellaneous Expense:	 53,500
Studies	Expense of installation
Expense of installation	45,500
Administration expense	147,500
Miscellaneous works	67,000
Overhead	42,500
Miscellaneous equipment	24,000
	380,000
Modification of low voltage telegraph lines	1,800,000
Total	11,600,000

power consists of 50 locomotives. Freight and passenger locomotives are identical except for gear ratios and each locomotive weighs 88 tons with 56.3 tons on drivers. Each locomotive has two motors aggregating 1,700 hp. Passenger trains weighing 550 tons are operated at speeds up to 56 miles an hour and freight trains weigh-

* The major part of this article was obtained from the March, 1931, issue of the *Revue Générale des Chemins de Fer* and has been supplemented by information from other sources.

ing 1,000 tons are hauled at speeds up to 44 miles an hour. The expenses of installation were divided as shown in Table I.

Of this total \$9,100,000 was furnished by the state as a loan in 1920, 1924 and 1925 and \$2,500,000 was supplied from reserves.

Schedules Are Much Improved

The electrified line was placed in service in May, 1926, but accelerated schedules were not put into effect until May 15, 1927. The saving in time is two hours for express passenger trains, two hours and a half for ordinary passenger trains and from ten to twelve hours for freight trains.

It is difficult to compare in an entirely satisfactory manner the results of the last year of steam operation (1925) and those of the first year of normal electric operation (1928). Traffic increased in the interval as shown in Table II.

Moreover it is necessary to note that there were, in the course of the year of steam operation, inevitable variations coming from the fluctuation in the prices of

Table II—Development of Traffic

Years	Thousands of Miles run by trains			Thousands of Miles run by car axles		
	Total	Express and Ordinary Pass. Trains	Per Cent	Total	Express and Ordinary Pass. Trains	Per Cent
1925.....	2,320	1,690	73	630	41,600	53
1928.....	2,920	2,180	75	740	56,200	49
Per Cent Increase....	26	29	17	25	34	18

coal and that improvements and economies which did not appear in the results of 1925 were realized later on. Furthermore electric service is still too new to permit an exact estimate of its depreciation rate and maintenance expense. In particular the expenses in 1928 for maintenance of electric equipment are no gage for the years to come.

Switching Locomotives To Be Operated by One Man

An endeavor has been made to arrive at a comparison between electric service for the year 1928 as it is actually operated plus improvements for the future, and steam service such as it would have been if it had been continued.

The economies really traceable to electrification, in motive power personnel, totaled 400 employees who, at an average annual wage of \$965, would earn \$386,000. Due to electrification, it is planned to limit switching engines to but one employee, which will provide further economies.

The reduction of time run by trains effected a saving

in wages equal to 1.3 cents per mile—that is, \$37,500 for 2,920,000 miles. The cost of a general overhaul of electric locomotives was \$1,985 in 1928. In the future it will probably reach \$2,280 because of the increased utilization per locomotive.

Locomotive Maintenance Only Three Cents a Mile

The number of miles run between two shoppings varies with the nature of the service. It has heretofore been 105,500 miles. In freight service it has even reached 155,500 miles. An average of 112,000 miles is expected.

At the present time maintenance expenses of electric locomotives average 2.03 cent per mile. Because of expenses not foreseen and general shop expenses, this figure must be raised to 3 cents per mile. By contrast the maintenance expenses of steam locomotives were 11.63 cents per mile in 1924 and 8.63 cents per mile in 1928. This expense constantly declines because the locomotives freed by electrification have replaced older rebuilt locomotives, thus avoiding the expense of keeping these in repair. It is necessary, therefore, to count maintenance expenses of less than 8.63 cents per mile for steam loco-

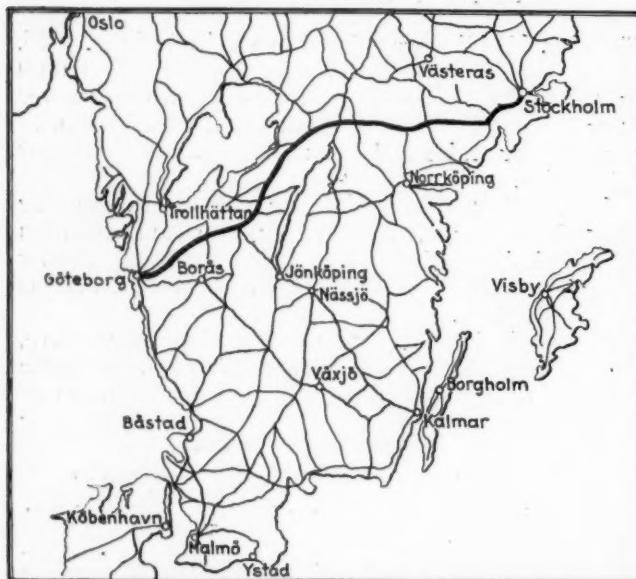
tions at 0.75 cents per kw.h. (1 cent at the beginning). Expenses for current were about \$500,000. From this sum there may be deducted \$43,000 for economies realized in the cost of local lighting. Thus there remains an expense for current of \$457,000.

It is a very modest estimate to say that 2.65 pounds of coal in a locomotive equals 1 kw.h. at the sub-station. The consumption of current for exclusive railway use (65,000,000 kw.h.) corresponds then to 86,000 tons (2,000 lb.) of coal in steam operation. The price of coal in recent years has been quite variable. At the present time it varies from \$4.85 to \$5.10 per ton at the port of entry. Considering the expense of transport, storage, etc., coal costs \$5.80 to \$6.80 per ton at the point of consumption. Assuming a price of \$5.58 per ton, at engine terminals, for 86,000 tons, the cost would be \$480,000—showing an economy in favor of electric operation of \$21,400.

The annual expenses of maintenance of power lines are divided as follows:

For service and maintenance, \$95,000; depreciation on substation and cables, \$87,000—a total expense of \$182,000.

The annual charges to reserves for the renewal of locomotives are 3 per cent of the investment for steam locomotives and 4 per cent for electric locomotives. Since there is no reason why the life of an electric locomotive should be shorter than that of a steam locomotive, an average of 3.5 per cent is used for making comparisons,



Railroad Map of the Southern Part of Sweden Showing the Location of the Electrified Stockholm-Göteborg Line

motives. For this purpose the figure of 6.65 cents per mile is estimated. If this is accepted, maintenance expenses of electric locomotives are still 3.65 cents per mile less than for steam. For 3,420,000 miles run by the locomotives in 1928, this represents an economy of \$125,000.

The increase in the speed has brought about a rise in maintenance expenses for rolling stock, but the cost of cleaning and painting has been lowered, due to the elimination of coal smoke. Expenses of lubrication, cleaning and lighting of electric locomotives are 0.26 cents per mile less than those of steam locomotives. Water service expenses averaged $\frac{1}{2}$ cent per mile and still remain in a large degree because secondary lines are still operated by steam and water stations cannot be abandoned. An important part of engine-house expense which, in steam operation, was 0.833 cents per mile, has been done away with. The total of economies of this kind is about 1.3 cents per mile; in other words, a total of \$44,200 for 3,400,000 miles run by locomotives.

The consumption of current in 1928 was 66,700,000 kilowatt hours measured at the sub-station and should be counted at the contract price with the state power sta-

Table III—Increased Costs and Savings Due to Electrification

	Increase	Decrease
	Increase	Decrease
Wages (Engine Crews and Service).....	.....	386,000
Wages (Train Crews).....	.....	37,500
Maintenance of Rolling Stock.....	.....	123,300
Maintenance of Machinery.....	.....	44,200
Fuel	182,500	21,400
Maintenance and Depreciation of power lines.....	182,500	.....
Renewal of rolling stock.....	16,100	.....
Interest on Capital invested in electric locomotives.....	40,200	.....
Interest on Fixed Installations.....	343,000	.....
Total	581,800	612,400

which results in an added expense of \$16,100 chargeable to electrification.

Avoiding the important expenses which the construction of engine terminal facilities would have cost, there was no capital expenditure necessary for the development of steam service in 1928. If steam operation had been continued, it would have been necessary to modernize the locomotives. On the other hand, electrification involved the purchase of locomotives costing about \$3,160,000, but the total interest on this investment should not be charged to electrification. The General Direction of the Swedish State Railways makes the following estimate:

This \$3,160,000 represents the value of 120 steam locomotives, or the number of locomotive renewals in five years out of a total of 1,000 locomotives owned by the Swedish State Railways. The electric locomotives have made available exactly this number of steam locomotives but they have made them immediately available, that is to say, a certain average number of years before the time when the utilization of these locomotives would otherwise have been possible. It is necessary therefore to charge to electric operation the interest on \$3,160,000 during this average number of years—a total of \$40,200.

Of \$8,030,000 in fixed installation, \$1,800,000 are chargeable to laying telegraph lines underground. This expense was divided, \$740,000 being paid by the railways and \$1,040,000 by the post office department.

Of the total of \$11,600,000 spent for electrification, it
(Continued on page 1121)

Albert E. Clift, Central of Georgia President, Dies

Head of the Illinois Central's largest subsidiary road had been in railway service 43 years

ALBERT E. CLIFT, president of the Central of Georgia since February, 1929, died on May 30 at the Central of Georgia hospital in Savannah, Ga., after an illness of one week. Stricken on May 23 while in a Savannah drug store, Mr. Clift, who was in his sixty-second year, failed to rally after an operation for an intestinal perforation caused by an ulcer.

Prior to his election to the presidency of the Central of Georgia, Mr. Clift had been for 41 years in the service of its parent railroad, the Illinois Central. During the term of that service he rose from the position of call boy to that of senior vice-president of this large Middle Western road. He was the third officer of the Illinois Central to become president of the Central of Georgia in recent years, his predecessors being Lawrence A. Downs, now president of the Illinois Central, and John J. Pelley, president of the New York, New Haven & Hartford, whom Mr. Clift succeeded in the presidency of the Central of Georgia.

Although he was head of the Central of Georgia for only a little over two years, Mr. Clift in that brief time encountered, along with other railroad executives, the pressing problems attending the drastic and continuing decline in traffic and earnings throughout 1930 and the first half of 1931. An examination of comparative statistics reveals that the Central of Georgia, under his direction, met this crisis with operating economies which mitigated the effects of the depression by holding the percentage decline in net railway operating income to a figure approximating the percentage decline in gross revenues.

During 1929, the first year of Mr. Clift's presidency, gross revenues of the Central of Georgia were \$25,033,992 and net railway operating income was \$4,508,457, both about the same as the corresponding 1928 figures. Nineteen-thirty, however, brought a 15.78 per cent decrease in gross revenues as compared with 1929. Throughout this drastic revenue change operating expenses were so skillfully controlled that at the close of 1930 they had been reduced 15.74 per cent to hold net railway operating income of 1930 to only 18.62 per

cent road under that of 1929. Likewise during the first quarter of this year, when gross revenues declined 20.14 per cent from the comparable 1930 figure, operating expenses were correspondingly reduced so that the decline in net railway operating income was but 19.82 per cent. This performance becomes all the more remarkable when it is compared with the composite revenue statistics of Class I roads in the Southern district. During the first three months of this year the Southern district, as compared with 1930, reported a gross revenue loss of 20.2 per cent—virtually the same as that of the Central of Georgia. Yet the latter reduced its operating expenses 21.5 per cent as compared with a 16.7 per cent reduction for the district as a whole.

Albert Earl Clift was born, October 15, 1869, at Urbana, Ill. He entered railway service as a call boy on the Illinois Central at Champaign, Ill., and on December 5, 1888, became a freight brakeman for the same company. He was promoted to conductor on April 8, 1892, and on February 19, 1893, was appointed engine foreman of the Champaign district of the Illinois Central. He held this latter position for less than a month, then being promoted to yardmaster. He became a conductor on the Chicago district in December, 1894, and a passenger conductor on the same district in August, 1901. In October of the following year he was appointed acting trainmaster of the Chicago district, serving in that capacity until February, 1903, when he was promoted to trainmaster. He became superintendent of the Freeport division on February 22, 1905, at Freeport, Ill., and in January, 1907, was trans-

ferred in the same capacity to the St. Louis division with headquarters at Carbondale, Ill. On June 1, 1910, Mr. Clift was promoted to general superintendent of the Southern lines, with headquarters at New Orleans, La., in which position he served until May 10, 1912, when he was transferred to the Northern and Western lines, with headquarters at Chicago. He became general manager, with the same headquarters, on August 1, 1917, and in March, 1923, was promoted to vice-president in charge of operation. He was appointed senior



Albert E. Clift

vice-president in November, 1924, serving in that capacity until February, 1929, when he took over his duties as president of the Central of Georgia.

Mr. Clift had taken an active interest in association work. He was a member of the American Railway Engineering Association and a member of a special committee of the operating division of the American Railway Association. In 1926 he served as vice-president of the Traffic Club of Chicago, of which association he was president in 1927. The following year he was elected a director.

What Is Fair Competition?

(Continued from page 1110)

want, we believe to be identical; that is, the prompt enactment of statutes, state and federal, designed to put railroads and commercial motor vehicles on as nearly the same basis under the laws of the land as the nature and conditions of the two industries admit.

We think certain specific things should be done and briefly we detail them as follows:

(a) No motor carrier for hire should be permitted to commence public service without authority from a public tribunal; and that authority should never be granted unless the applicant therefor affirmatively demonstrates that there is a genuine public need for an additional agency of public transportation.

(b) Motor vehicles for hire should be made to pay taxes for general governmental purposes comparable to those paid by railroads and other lines of endeavor. In addition to such taxes proper, motor vehicles should be made to pay reasonable compensation for the use of the public highways as a place for private gain, bearing in mind in fixing such compensation that the vehicles of very great size and weight have added materially to the cost of constructing and maintaining the public highways.

(c) All those salutary regulations now applicable to railroads, such as standardization of accounting; the making, posting and observance of reasonable rates; the issuance of bills of lading; responsibility for persons injured or goods lost or damaged in transit, and the like, should have their counterpart in relation to transportation by motor vehicle.

(d) There should be reasonable and sensible provisions in the public interest to reduce highway costs and to promote safety on the public highways, including the regulation of hours of service, of safety devices, of size, weight and speed, and so on.

(e) Provisions with reference to free transportation and inhibitions against unjust discriminations and rebates should apply to carriers by motor vehicle just as to the railroads. The substance of sections one, two, three, and six of the Interstate Commerce Act should certainly be made applicable to interstate motor vehicles for hire.

(f) The principles of interstate rate making embraced in the fourth section of the Interstate Commerce Act should be made applicable to motor vehicles for hire engaged in interstate commerce—or, what would seem to be much better in the public interest, those principles should be eliminated entirely as to all carriers, rail and motor.

(g) A governmental agency, such as the Interstate Commerce Commission, should have general jurisdiction over all interstate motor carriers for hire as well as over railroads.

(h) Railroads should be given specific statutory authority just as other individuals and corporations—and on the same terms—to utilize motor vehicles in co-ordination with and, where desirable, in lieu of train service. Though last in order, this suggestion is not the least important. The tendency is growing throughout the country to exclude railroads from the highways. This is evidenced by the provisions of the bill to regulate interstate buses which passed the House of Representatives in the last Congress. As we have said, motor vehicles for hire have their place in the economics of transportation. To the extent to which they fill an economic need they should be open to all under proper restrictions and regulations. No reason in logic exists why a railroad company should not be permitted to operate buses and trucks in such localities as will result in improved service and in operating economies. We submit that a firm stand should be taken against the proposal to exclude the railroads from the highways.

Aggressiveness Marks

Pennsylvania's Policy

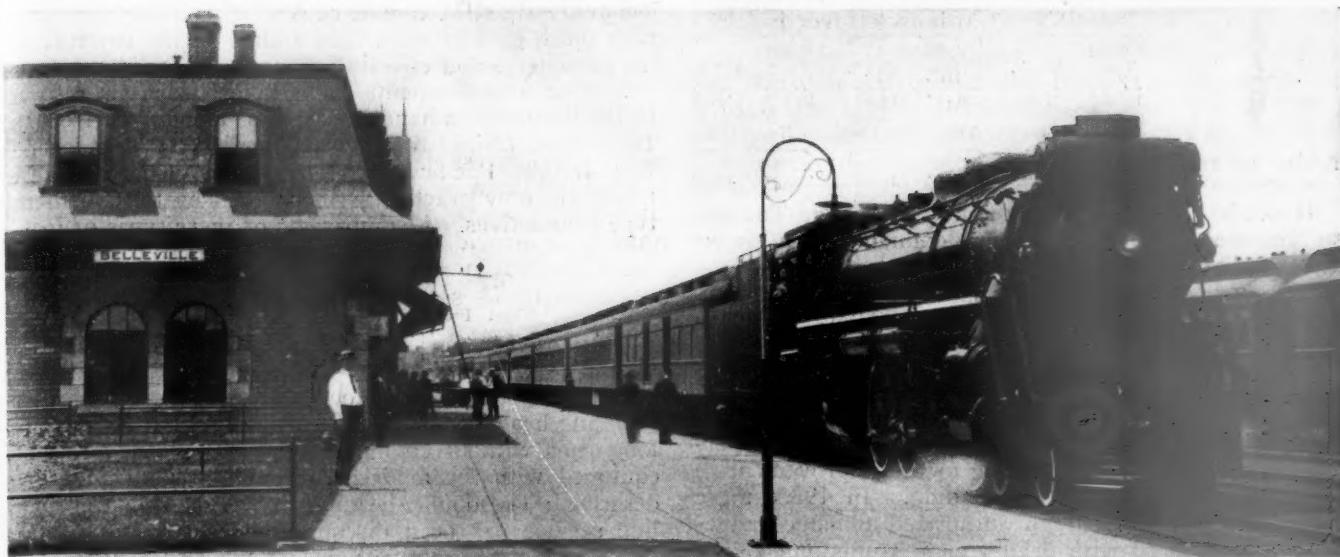
(Continued from page 1107)

in which to press forward its program of improvements—an extensive electrification project and other capital betterments designed to promote operating economies and provide better service to patrons. This program is outlined in an article appearing elsewhere in this issue. The advantages of going forward at such a time are the relatively low prices of materials and the higher efficiency of labor, together with the favorable effect of such a program on general business conditions in the territory served by the railroad. The disadvantages of heavy expenditures in a period of depression resolve themselves largely into the question whether business will revive sufficiently to make the investment profitable. The answer to this question must come from past experience and this, of course, shows that business always has revived after depression. Nevertheless, however, it does take courage to spend money plentifully while others are hoarding it. If time proves the Pennsylvania to be right in its policy, as it should if past experience is a reliable guide, then the example will afford a lesson of great importance.

It is not only in improving its rail service alone, however, that the vigor of the road's policy is shown, but also in its efforts to bring about transport co-ordination and in strengthening its position in the proposed consolidation plan is its program similarly forward-looking. The company is co-operating with and extending its investment into highway air and ocean transport and announces its desire to go much farther in this direction if permitted to do so by law. It is also pursuing plans to recapture long-distance highway freight traffic by an adaptation of its service to permit the rail haul of motor truck bodies between terminals.

The company's annual report for 1930 presents some interesting figures comparing the operating efficiency of that year with that of 1921. Net tons per train showed an increase of 24.9 per cent and net ton-miles per train hour, 49.2 per cent. Coal consumption per 1,000 gross ton-miles declined 15.1 per cent and the inventory of materials and supplies was reduced by 64.4 per cent.

There are no grounds for supposing that an end has been reached in such economies, given a return of normal business conditions and reasonably fair treatment from regulatory authorities. Indeed, it is possible that the economies to be expected in the years to come from transport co-ordination may be even greater than those effected in the past decade in railroad operation in its narrower sense. Line-haul railroad charges form only a small part of the total transport costs of many commodities. For many products packing and crating, terminal handling and local trucking make up the bulk of the transport bill. Reduce these costs by only a slight percentage by a closer co-ordination of rail and highway transport and the resultant savings will be much greater than even a larger increase in the efficiency of railroad line-haul alone. The road's efforts, therefore, in the virgin field of transport co-ordination may yield economies quite comparable to those which the past decade has seen in railroad operating efficiency. The Pennsylvania, as one of the largest properties and obviously a well-managed one, is plainly prepared to join with others in giving quite as good an account for the railroad industry in the next decade as it has in the one just past—provided the burdens imposed by the government are not completely oppressive.



One of the New Six-Hour Trains Enroute

Combining Speed With Efficiency

Canadian National finds economy in accelerating
movement of trains

By C. F. Needham

Assistant to General Manager, Central Region, Canadian National Railways

ALITTLE more than a year ago, the Canadian National Railways put into operation a six-hour schedule in passenger train service over the 334 miles between the two largest cities in Canada—Montreal and Toronto. The former city has a population of over a million people and the latter about three-quarters of a million. These high speed trains have proved remarkably popular with the business men of the two large commercial communities as well as with the public generally, and since their inauguration they have been running with practically full loads daily.

They mark the culmination of many years' campaigns. During the past decade great strides have been made in speeding up and more efficiently handling the traffic. This is exemplified particularly in the improved service in respect to both passenger and freight traffic on the C. N. R. between the two cities referred to.

The line of the C. N. R. between Montreal and Toronto, which is double-tracked, generally follows the shores of Lake Ontario and the St. Lawrence river. The altitude of Montreal is 46 ft. and of Toronto 254 ft. above sea level and there are no long and heavy grades; the distance between the two cities is 334 miles.

The schedule time and speeds of the fast passenger trains in 1920 and 1930, of which there were but two in each direction in the former year, as compared with three in the latter, are as follows:

	Train No. 14			Train No. 16			Train No. 6					
	Year	Total Time	Sta- tion Stops	Miles per hr.	Year	Total Time	Sta- tion Stops	Miles per hr.	Year	Total Time	Sta- tion Stops	Miles per hr.
Toronto to Montreal	1920	8'30"	14	39.29	1930	7'45"	13	43.10				

	Train old No. 15 New No. 5			Train No. 17			Train new No. 15					
	Year	Total Time	Sta- tion Stops	Miles per hr.	Year	Total Time	Sta- tion Stops	Miles per hr.	Year	Total Time	Sta- tion Stops	Miles per hr.
Montreal to Toronto	1920	7'40"	11	43.57	1930	7'30"	10	44.53				

Schedule Reductions

The two new trains, No. 6 eastbound and new No. 15 westbound, were put on in the spring of 1930 and cover the distance in six hours, or at an average speed of 55.66 m.p.h., this being a decrease of 1 min. 40 sec., or 22 per cent as compared with the fastest running time in 1920. Notwithstanding the shortening of the running time, improvement has been made in the "on-time" performance as compared with previous years, and the records for the latest month available indicate an average "on-time" performance of these trains of well over 90 per cent.

At the same time that the Canadian National put on the new six-hour trains between Toronto and Montreal, a service of 18 hr. 15 min. was established between Montreal and Chicago, a distance of 848 miles, with an average speed of 46.5 m.p.h., with 16 stops. A reduction of six hours was also made in the running time of the fast transcontinental trains between Montreal and Vancouver, and of 3½ hr. between Toronto and Vancouver.

Freight Train Speeds

The freight trains have also speeded up, as shown by the following comparison of the schedules of the principal manifest freight trains in 1930 and 1923:

	Year	Train No. 495		Train No. 493		Train No. 2/495	
		Total Time	M.p.h.	Total Time	M.p.h.	Total Time	M.p.h.
Montreal to Toronto	1923	23'00"	14.52	26'15"	12.72	17'30"	19.08
	1930	19'00"	17.57	20'45"	16.09		
						Train No. 2/492	
Train No. 496				Train No. 492			
Toronto to Montreal	1923	24'00"	13.91	18'30"	18.05		
	1930	17'30"	19.08	17'30"	19.08	17'30"	19.08

It will be observed that the fastest time from Toronto to Montreal, the direction of predominant traffic, shows an improvement of one hour, or 5.7 per cent.

A comparison of the performance of these fast manifest trains for the years 1930 and 1923, is shown in the following table:

	1930	1923	Increase	%
Average speed	16.1	13.6	2.5	18.4
Gross Tons per Train.....	2,327	1,812	515	28.3
Gross Ton Miles Per Train Hour.....	37,376	24,573	12,803	52.1

The improvement in the manifest freight train performance is largely attributable to the improvement in motive power and in train loading. In 1923, these manifest trains carried an authorized tonnage reduction, as compared with dead freight train tonnage, of from 10 to 20 per cent; these reductions have gradually been discontinued, with the result that the manifest trains are now carrying the full tonnage rating of a dead-freight train, and the schedule is being maintained equally as well as in former years.

Motive Power Improvements

Notwithstanding the increase in train speed in both passenger and freight service and the heavier car equipments in the motive power, the extension of locomotive shows a decrease in both passenger and freight service. This, to a considerable extent, is the result of improvements in the motive power, the extension of locomotive runs and fewer train stops.

In 1920, the passenger trains referred to were handled by Pacific type locomotives; at the present time these passenger trains are being handled by Northern, Mountain and Hudson type locomotives, stoker-fired, equipped with improved types of superheaters, feed water heaters, thermic syphons, power and screw reverse, track sprinklers, Vanderbilt tender tanks and vestibule cabs. In addition the Hudson locomotives are equipped with boosters, and also with exhaust steam injectors in place of feed water heaters. The respective capacities of the locomotives referred to are as follows:

Type	Driving Wheel	Steam Pressure	Tractive Effort	Total Weight	Capacity of Tender	
					Coal	Water
Pacific	69"	200 lb.	39,700	438,000	10 tons	7,500 gal.
Northern	73"	250 lb.	56,800	653,400	20 tons	11,500 gal.
Mountain	73"	250 lb.	50,000	627,100	20 tons	11,000 gal.
Hudson	80"	275 lb.	43,300	662,200	20 tons	14,000 gal.

(10,000 Booster)

The Northern type of locomotive is designed to handle heavy trains, either freight or passenger, at high speeds. The Mountain type is for heavy and fast passenger service. The Hudson type is designed specially for high speed passenger service, for use on the six-hour trains between Toronto and Montreal, and has no difficulty whatever in making the running time.

A recent dynamometer test of the Hudson type locomotive on trains No. 14 and 5, consisting of 10 cars, indicates that the draw bar pull at starting momentarily reached 40,000 lb., dropping to 22,000 lb. at 10 m.p.h., while the average throughout the trip was 8,500 lb.; the maximum speed attained was between 78 and 81 m.p.h. over a period of six minutes.

The large coal and water capacities enable these locomotives to make long runs without stops, and whereas 10 years ago the locomotives were changed on the passenger trains at two intermediate terminals between Toronto and Montreal, one locomotive now runs through, without enginehouse attention. These heavier

locomotives are, of course, capable of starting the trains with much greater ease, thus adding to the comfort of the passengers and effecting economy in operation.

Similar improvements have taken place in respect to the locomotives handling the fast freight service. In 1920, these freight trains were handled by Mikado and fast freight Pacific type locomotives, whereas these trains are now practically all handled by the Northern type locomotives. A comparison of these types of locomotives follows:

Type	Driving Wheel	Steam Pressure	Tractive Effort	Total Weight	Capacity of Tender	
					Coal	Water
Mikado	63 in.	180 lb.	53,100	444,800 lb.	12 tons	7,500 gal.
Pacific	69 in.	185 lb.	33,750	378,000 lb.	10 tons	6,700 gal.
Northern	73 in.	250 lb.	56,800	652,400 lb.	20 tons	11,500 gal.

The Northern type locomotives are capable of handling heavy freight trains at high speed and making long runs without enginehouse attention, and are also equipped with the modern appliances, as hereinbefore described. The double-heading of freight trains in main line service has been discontinued as a result of the improvements in motive power.

Improved Equipment

Important improvements have also taken place in the car equipment used on the fast passenger trains. In 1920, the cars were of steel underframe construction, with wooden upper structure, whereas the cars are now all steel, and many of them have thermostat heat control. In 1920, some of the equipment was gas-lighted, whereas now the entire train is lighted by electricity. Chamberettes or single-room sleeping cars are now in service on these trains. The present day equipment has more comfortable furnishings and better appointments, and the decorative features have been greatly improved. An outstanding feature is that the observation cars on these trains are equipped with radio receiving sets in charge of a radio operator; in addition to a receiver head set being provided at each seat, there is a loud speaker in the car.

The day trains are unique in that they are equipped for train telephone service, it being possible for the passengers to have telephone conversation from the train while in motion with outside parties over the local or long distance Bell telephone system, by placing their order with the radio operator. Likewise, outside parties may establish telephone communication with any passenger on the train by placing orders with their telephone exchange, giving the name of the passenger and the number of the train on which traveling, in which case the radio operator arranges for the passenger to be paged. A booth with a standard telephone set is provided on the train for this service.

The freight car equipment that was in use 10 years ago was nearly all wood, but steel underframes were beginning to come into use. The freight cars now being obtained have steel upper and under frames; improvements have also been made in the draft gears and trucks to permit of heavier loading and to withstand the additional strain due to heavier trains being handled and the higher speed at which the trains are operated.

There has been no material change in train dispatching methods, as telephone train dispatching was in use on this territory in 1920. However, considerable improvement has been made in the signal appliances. In 1920, automatic block signals were in use for only a short distance out of Montreal, whereas since that time the automatic block signal system has been extended over the entire line between Montreal and Toronto. The installation of the automatic signal has, of course, been an important factor in the speeding up of trains, as well as adding to safety of operation.

Track conditions have also been greatly improved by the installation of heavier rails, hardwood ties and rock ballast. There have also been constructed considerable additional lengths of passing tracks, required, of course, by the longer freight trains being handled.

Efficiency of High Speed

These increases in train speed were made only after a careful study of the advisability of adopting increased train speeds as a general policy. Efficiency is, in a mechanical sense, the relation between useful work or effect produced to the energy expended in producing it; and in our consideration, the effect to be produced is represented by the movement of a train at given speeds from one terminal to another and the energy that will be expended is represented by the coal consumption, that being the source of power in a coal burning locomotive.

The horse power developed by a locomotive at any particular time may be expressed by the formula—
 $R \times M P H$

, where R equals the total resistance of

375

the train in pounds and M P H the speed in miles per hour. As an example for passenger service, let us compare the horse power required to move a train consisting of 8 cars of 75 tons each and a locomotive of 330 tons, or a total of 930 tons, at a speed of 60 m.p.h. and at 40 m.p.h. Tests that have been made indicate that the resistance per ton of a 75-ton car at a speed of 60 m.p.h. is 7.9 lb. and at 40 m.p.h., 5.8 lb., and assuming, for convenience, that the locomotive would have the same resistance per ton, also that the locomotive would be equally efficient at the two speeds, then, for a trip of 100 miles, we may calculate the total horse power required as follows:

At 60 m.p.h.:

$$\frac{930 \times 7.9 \times 60 \times 100}{375 \times 60} = 1438 \text{ H. P. Hrs.}$$

at 40 m.p.h.:

$$\frac{930 \times 5.8 \times 40 \times 100}{375 \times 40} = 1438 \text{ H. P. Hrs}$$

Difference (Increase 60 over 40 M. P. Hrs.) 521 H.P. Hrs. or 36.2%.

The coal consumption would increase approximately in proportion to the horsepower hours, or, from the above calculation an increase of 36.2 per cent might be expected in the coal consumption resulting from an increase in speed from 40 to 60 m.p.h. There are, of course, a number of other factors which have a bearing on the total coal consumption. The quantity of coal is affected considerably by the train stops: again, the higher the speed, the more coal is consumed in making the stop. Less coal would be required in passenger service for steam heat during the heating season and for lighting, because of the shorter time occupied in making the trip. Then there is the quantity of coal used for preparing the locomotive for the trip and the quantity remaining in the fire at the end of the trip, which quantities would be about the same regardless of the speed.

The percentage increase in the total horsepower hours is directly proportional to the increase in the train resistance per ton (7.9 lb. for 60 m.p.h. and 5.8 lb. for 40 m.p.h., an increase of 36.2 per cent in the example cited). Similarly, the increase in the total horsepower hours in freight service would be directly proportional to the increase in the train resistance per ton. For example, a train consisting of 50-ton cars would, as per tests made, have a resistance of 4.6 lb. per ton at 20 m.p.h. and 6.1 lb. per ton at 35 m.p.h., or an increase of 1.5 lb. or 32.6 per cent, which would also

represent the percentage of increase in total horsepower hours and coal consumption.

In considering the increase in total horsepower hours as calculated above, resulting from increased speed as a basis for anticipated increase in coal consumption, it must be borne in mind that the resistance of a train is difficult to determine with accuracy. Conditions of lubrication, weather, equipment, etc., vary enormously. The forces necessary to ascend grades or produce acceleration can be computed accurately but the rolling resistance for various speeds differs in almost every test.

Summary

A summary of some of the advantages of increase in train speed, as offsetting the increase in the total coal consumption is as follows:

1. The benefit to the traveling and shipping public by reduction in time of passengers and freight in transit.
2. The possibility of meeting highway bus and truck competition.
3. The meeting of competition of other railroads.
4. The increased track capacity by making it possible to handle a great number of trains in a given time—a highly important factor where a sufficient volume of traffic is available to take advantage of the greater track capacity thus provided.
5. The greater possible use per day that may be made of the equipment, owing to its being in service a shorter length of time in making a given movement, thereby reducing the number of units required, also tending to decrease the freight car per diem charges where car equipment is interchanged with other railways.
6. The elimination of station stops and delays as a result of the close check-up made of the train service when higher speed is contemplated, thereby creating conditions which tend to make it possible with the modern locomotive equipment to extend locomotive runs with the attendant benefits of decreased fuel consumption, elimination of roundhouse attention at intermediate terminals and greater monthly mileage per locomotive.
7. The decrease in overtime payments to engine and train crews, as in freight service.
8. The benefit of the greater momentum of the train in negotiating gradients.
9. The general speeding up of the whole "transportation machine."

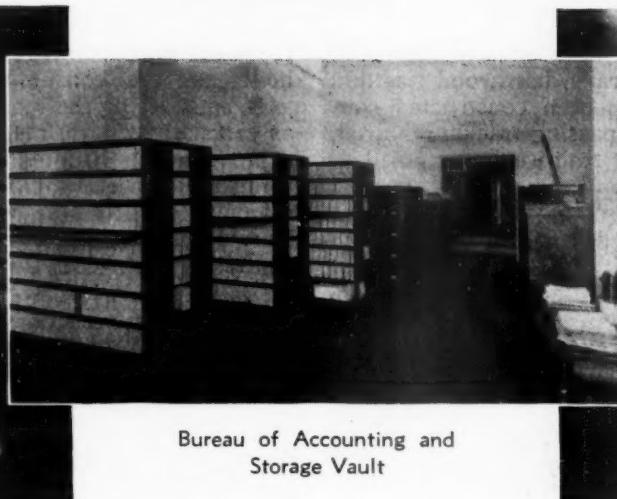
The Steam Locomotive in America's Railroad Progress

(Continued from page 1102)

future. As my closing comment, let me finally remind you that the railroads' battle is waged upon the field of economics in transportation and that regulation and legislation are corollaries of our main thesis. The decade which together we have examined evidences a splendid development in the reduction of operating costs and represents an achievement in progressively improved efficiencies. However, with some 80 per cent of railroad prime movers over ten years of age, we see that in their replacement a powerful ally capable of securing still greater economies is at hand, unused. I predict that the coming decade will witness the modern locomotive advanced to the firing line and that by its aid the railroads will again move forward along their entire front.



Hydraulic Trucks are Used for Moving Heavy Index Cases



Bureau of Accounting and Storage Vault



Freight Account Records are Stored on Convenient Shelves

S. P. Records Valued at \$1,686,500 Are Well Protected

Documents stored so as to be readily available and to promote office efficiency

By C. C. Malloy

Supervisor of Office Equipment and Methods,
Southern Pacific

THE necessity for storing records properly is indicated by the value of \$1,686,500 placed on those of the Southern Pacific in testimony before the Interstate Commerce Commission. To protect this valuable property, the Southern Pacific provides extensive storage facilities, including 972 safes, 43 binding machines, 20 fire-proof vaults and 47 building vaults, and purchases about 100,000 binders each year, at a cost approximating \$15,000. The operations of the facilities require 33 clerk-days per day and an annual cost of \$57,600.

The \$1,686,500 value of the statistical data compiled for the traffic and operating departments and regulatory bodies and records used for the purpose of making and checking freight claim settlements and settlements with other carriers, store department stock and price books, car record books, etc., is only a comparatively small fraction of the total worth of the records. Some records, such as drawings, are valuable because of the cost of reproduction, while others play an important part in the settlement of damage claims. For example, a river overflowed its banks and threatened to do serious damage to a large area of rich agricultural land. The Southern Pacific acted quickly to repair the break, making use of its available men, equipment and material. Claim was filed for the cost of the work done. Settlement to the amount of over \$1,000,000 was made 14 years afterwards, based on

records made at the time the work was done. In another case, a large dam collapsed, causing damage to the roadbed and structures of the Southern Pacific and making it necessary to reroute traffic at great expense. Claim for damage to the amount of \$250,725 was paid by the city which owned the dam, settlement in this case being also based on the records of the company. In both cases records were carefully checked before the claims were paid.

Records are of value in establishing claims against insurance companies for the value of materials destroyed by fire or other calamities. Important drawings, maps and tracings of property, buildings, locomotives, cars and machinery are produced at great cost, and if these and all copies of them were lost or destroyed, it would be necessary to make new drawings at approximately the original cost. The loss of records not only results in many cases in expenditures necessary to replace them, but also in a greater indirect cost due to operations suffering for lack of information needed during the time such records are being reproduced.

The records of a railroad company are not only a history of its origin and growth and of money spent in acquiring and maintaining property and equipment but they are also one of the instruments by which it is successfully operated. They are of benefit not only to those operating its properties but also to its stock-

holders and the general public. The large volume of these records and the great value of many of them makes it necessary to provide facilities for binding them compactly and for marking and storing them in such a way that records wanted may be obtained quickly and that those of value be given protection against fire and water, destruction by rats and mice, etc.

Records of receipts and disbursements make up the largest portion of these papers, and include papers incidental to the operations of the railroad, such as bills for freight, passenger tickets, payroll time cards and slips, payroll vouchers, requisitions for material, etc. The information shown on such records is currently recapitulated into various forms of reports. When this has been done, the original records lose much of their value although it may be necessary to refer to them in connection with claims and the compilation of special statements. Generally speaking, these are destroyed after being retained for a period of from three to six years.

Records are a guide during periods of increase of business. They afford a means of forecasting the probable business which will be handled. This enables financial and operating officers to get roadway and equipment in proper condition to handle the increased business.

Stockholders are benefited by records as they enable them to keep in touch with the operations of their property. The board of directors makes an annual report to the stockholders, outlining all transactions reflecting management of the property. Reports of revenues and expenses are also published in the daily press and in magazines which keep them currently informed.

The public is benefited and protected by records. This is accomplished through various Federal and state commissions, who are furnished with records of operation. These records are examined and analyzed by representatives who also confirm them by personal examinations in the offices in which they originate. The information thereby obtained aids commissions when making decisions relative to increases or decreases in rates, authorization of bond or stock issues, etc.

Storage Facilities Are Extensive

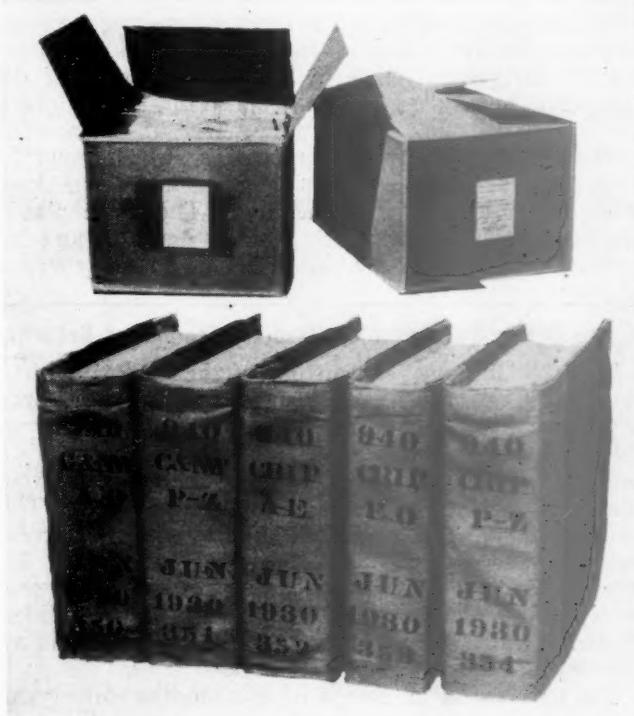
To protect its records the Southern Pacific uses large detached and isolated fire-proof vaults, fire-proof building vaults, record storage buildings and safes. Among these are 20 fire-proof vaults at division points, district stores and general shops. These vaults are detached and isolated from other buildings and rest on their own foundations. Nine of them are two stories in height, constructed of massive reinforced concrete with a tile interior lining as additional protection against fire and dampness. The vaults are of large size, varying from 14 ft. by 16 ft. to 30 ft. by 75 ft. Entrance is gained through a fire-proof steel vestibule doorway with outside and inside doors. The interior is lighted by electric lights which are disconnected each time the door is closed. Some of the early vaults have wood shelving, but the more recent types have been fitted with steel shelving throughout.

In addition to the detached vaults, there are approximately 47 building vaults which have a high degree of fire resistance. Twenty-two of these are located in general offices and 25 at various division points. Some of these building vaults are large in size, the largest being about 17 ft by 20 ft.

A large number of detached buildings are used for record storage. These range in size from a large office building 70 ft. by 150 ft., five stories high, to small

box car bodies. There are also 972 safes which are used for the protection of records; 740 of these are in the offices of station agents and the others are in general offices, railway clubs, offices of division superintendents, storekeepers, etc.

Safes and safe cabinets have proved to be very handy and convenient for storing and protecting records which are being used currently and are even used in offices which have vaults. Safe cabinets are placed near the desks of clerks who refer frequently to the records stored in them, thus making it possible for clerks to commence work promptly in the morning and to work up to the closing hour. If such records were stored in vaults, it would be necessary to open the vaults before working hours and to close them after working hours and thereby inconvenience clerks using the records. Maps, tracings and blue prints of maintenance of way and motive power departments are given double protection. Originals and copies are stored



Fibre Board Shipping Boxes Are Used for the Storage of Correspondence and Other Records—Bound and Marked Books of Office Records Are an Aid to Efficiency

in fireproof vaults in the office making them, while copies are also sent to at least two other points on the system to be stored in fireproof vaults.

General Office Vault

Because the accumulation of deeds, franchises, leases, ordinances, land patents and insurance policies became so great that the storage facilities were inadequate and resulted in lost time and inconvenience on the part of clerks who had to travel to detached vaults and buildings, the Southern Pacific recently constructed a two-story vault building 75 ft by 30 ft. in the rear of its general office building.

In this new vault there are nine rooms, three on the first and six on the second floor. On the first floor is a room for deeds and other records. The other two rooms are used for storing and protecting other valuable records of the accounting department, such as original payrolls, general books and registers of vouchers, and bills.

Rooms on the second floor are assigned to the auditor, the chief engineer, the engineer of maintenance of way and structures, the freight traffic department and the general superintendent of motive power. The room assigned to the auditor is used for the general books of the subsidiary companies of the Southern Pacific; the room assigned to the traffic department is used for tariff authorities and those assigned to other departments are used for the drawings and tracings of properties, buildings and equipment. The vault is equipped with metal shelving throughout, has electric lamps designed especially for lighting aisles, a commodious lobby with tables for examining records and air ducts with electric fans for supplying fresh air to those vaults where clerks must work for a considerable length of time.

The "property bureau," a department of the auditor's office, which has custody of deeds and other records relative to property, has a separate entrance to the large room in the vault in which these records are stored. This entrance consists of a short connecting hallway between the vault and a small office building in the rear of the general office building. The clerks of the "property bureau" work in a pleasant, well lighted and ventilated office within a few feet of the records stored in the vaults. Those records, which must be near the desks of clerks during office hours, are kept in strong units of metal shelving. These are placed near the desks of the clerks in the morning and returned to the vault at the close of office hours by means of a hydraulic truck.

Large Office Building Also Used for Storage of Records

Probably the most interesting of the many detached buildings which are used for the protection of records is the large building located less than 50 yards from the general office building. This is a five-story office building, approximately 70 by 150 ft., the top three floors of which are used for record storage. The walls, floor and ceiling of this building are of concrete and the windows and door casings are of metal. All rooms are completely equipped with automatic fire protective sprinklers. Fire protection is further provided by doors which will automatically divide the building into two parts if a fire should occur.

The building is in charge of a custodian during the day and is visited at frequent intervals during the night by a watchman. Records are not accepted for storage except when properly marked and supported by a properly prepared index card. Each department must arrange for the storing of its own records, but this is done under the supervision of a custodian who sees that records are neatly stored and that they are destroyed at the expiration of the retention period. Separate rooms are provided with lock and key for the storage of confidential correspondence and copies of payrolls. The building is provided with a shredding machine which is used for destroying tickets, blank vouchers and other forms which might be used for fraudulent purposes.

Estimated Annual Cost of Handling Records Is \$57,600

The handling of a large volume of records involves adequate containers, proper binding and marking and orderly destruction after the records have served their purpose. Practically all clerks handle records in connection with their work, and for that reason it is difficult to estimate the number of employees engaged in taking care of the records. There are, however, a considerable number of employees who give either all or a greater part of their time to getting the records ready

for binding, actually binding or marking them, listing and storing and listing for and supervising destruction. It is estimated that it requires about 33 clerk-days per day to do this work, although the actual number of clerks engaged in the work is much larger. The estimated annual cost of doing this work is \$57,600.

Binding

Since well-bound and marked records eliminate lost time in locating papers, conserve space and give storage rooms a neat and orderly appearance and thereby promote office efficiency, the Southern Pacific has arranged for facilities for practically every office on the system for binding and marking records. About 100,000 binders are used each year at a cost approximating \$15,000.

The kind of binder used depends upon the importance of the record, the frequency to which reference is made to it and the period for which it must be retained. Plain wrapping paper is suitable for some records while others require strong binders of wood covered with canvas and with leather backs and hinges and with corners reinforced by leather.

Fibre board boxes are used for storing correspondence, these being the same kind of boxes which are used commercially for shipping canned goods, and other merchandise. At the end of each box a sticker form is pasted, showing the box or package number, the form number, the description of the records, the dates of the records, and the name of the office sending them to storage.

Binding machines are made available for the use of all of the larger offices. Machines are furnished for the use of various accounting department officers, division superintendents, superintendents of large shops, large stations, etc., a total of 43 machines being used. One machine is assigned for the use of all general offices, other than those to which machines are regularly assigned. Any general office having records to be bound sends them to this central bureau where they are bound and neatly marked and returned for filing.

At the smaller stations not provided with binding machines, binders with holes punched at the stationery store are furnished. Records are taken out of working binders or from wallboards, placed between binders and bound with string or wire. A canvas back is then put on the binder, which is properly marked.

Standards for marking records have been adopted. A certain location is designated on the back of each binder for the form number, the date, the name of the office, the serial number of the bound volume, etc. It is occasionally necessary to vary from this standard. In some cases, the complete name of the report is marked on the binder.

At the general offices a marking machine is used for this purpose. Metal type is placed in this machine and records are then marked by pressure through a ribbon. Stencils, both metal and cardboard, and black dry stencil ink are used in the offices of agents, division superintendents, etc. Characters either three-eighths inches or three-fourths inches in length are generally used. At some of the smaller stations, marking is done by free hand.

Destruction of Records

The Commission has issued regulations listing, in a general way, all railroad records and specifying the period for which they must be retained, leaving it to the individual carriers to issue such further supplementary instructions as may be necessary, but the Southern Pacific has, for its own purposes and in cer-

tain instances, extended the retention period established by the Commission. That employees, generally, may be fully informed as to the period which records should be retained, an auditor's bulletin is issued, listing all forms used by the Southern Pacific and showing the number, the title, the department which is custodian of the vital copy (which is not in all cases the original copy), the period of retention and the I. C. C. item of authority covering destruction.

By means of this bulletin, it is possible for any employee to list records quickly for destruction. Records authorized for destruction are sold to paper manufacturers after such parts of them have been salvaged as can be reused, such as binders; paper suitable for scratch paper, etc. Used tickets, or other special records, the circulation of which would obviously be dangerous, are sold on condition that they be macerated at paper mills or elsewhere in presence of responsible company employees.

Swedish Electrification Justified by Operating Results

(Continued from page 1112)

is proper, therefore, to subtract \$3,160,000 for the steam locomotives made available for other service and \$1,040,000 for placing telegraph lines underground. The remainder—\$7,400,000—is to be charged to electrification and ought to earn interest on the investment. The average official interest rate in Sweden (1930) is 4.63 per cent. At this rate, the interest on the increased cost of fixed installations necessary for electrification is \$343,000. The results are summarized in Table III.

The result is that the capital invested in the electrification of the Stockholm-Göteborg line will earn a fair return which will eventually be greater than \$30,600 a year. There are other advantages of great economic value which cannot be put down in figures. For example, all telephone, telegraph and signal lines have been placed in cables. Maintenance is much less costly and the security of operation and power are greatly increased. It has been shown that the decrease in time run by trains has brought a very appreciable economy. Benefits to commerce are shown by the fact that the shipper and receiver of a car of freight gain 24 hours with electric operation.

The electric locomotives perform 43 hours of service in two days, which is impossible with steam locomotives. The electric locomotives average 64,500 miles per year, or more than double that of the steam locomotives.

Faster transportation and more frequent schedules have brought about an increase in both freight and passenger traffic. Finally, electrification avoids the necessity of Sweden's paying tribute to a foreign country for fuel.

THE HAMILTON-SOMERSET DIVISION of the new Bermuda Railway was officially opened on May 23, according to newspaper dispatches from the island, by the running of a train which made the round trip with a party of government officials, company officers and guests. Regular operation of the division, however, will be inaugurated only upon the arrival of rolling stock from England. The St. George's section of the railway, which will be spared the problem of highway competition, in view of the fact that only horses and bicycles are allowed on the island, is still under construction.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended May 23 amounted to 755,071 cars, an increase of 7,339 cars as compared with the week before, due to heavier loading of coal and ore. As compared with the corresponding week of last year this was a decrease of 174,535 cars, and as compared with 1929 it was a decrease of 307,017 cars, the largest drop as compared with 1929 that has yet been reported. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

	Week Ended Saturday, May 23, 1931		
Districts	1931	1930	1929
Eastern	176,649	216,535	251,760
Allegheny	147,529	190,498	223,643
Pocahontas	43,989	52,627	59,240
Southern	111,294	125,527	141,600
Northwestern	101,329	146,401	167,760
Central Western	110,550	129,280	141,512
Southwestern	63,731	68,738	76,573
Total Western Districts	275,610	344,419	385,845
Total All Roads	755,071	929,606	1,062,088
Commodities			
Grain and Grain Products	36,581	38,770	39,368
Live Stock	20,018	22,802	25,426
Coal	116,733	139,875	160,508
Coke	6,625	9,368	12,629
Forest Products	33,643	51,235	69,099
Ore	20,730	57,286	73,485
Mdse. L.C.L.	222,300	246,273	262,237
Miscellaneous	298,441	363,997	419,336
May 23	755,071	929,606	1,062,088
May 16	747,732	928,759	1,046,594
May 9	747,449	932,346	1,048,960
May 2	775,291	942,674	1,051,935
April 25	759,272	906,879	1,051,885
Cumulative total, 21 weeks	15,277,301	18,621,529	20,352,247

The freight car surplus for the period ended May 15 averaged 608,671 cars, an increase of 7,341 cars as compared with the week before. The total included 292,879 box cars, 246,272 coal cars, 30,003 stock cars and 16,081 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended May 23 totaled 51,173 cars, an increase over the previous week of 680 cars and a decrease of 6,711 cars from the same week last year.

Total for Canada	Total Cars Loaded	Total Cars Rec'd from Connections
May 23, 1931.....	51,173	27,890
May 16, 1931.....	50,493	28,271
May 9, 1931.....	49,730	29,367
May 24, 1930.....	57,884	34,683
Cumulative Totals for Canada		
May 23, 1931.....	1,006,423	599,469
May 24, 1930.....	1,205,097	763,828
May 25, 1929.....	1,334,627	910,380

BIRD SANCTUARIES.—The Kansas City Southern, the Missouri-Kansas-Texas and the Missouri Pacific, in co-operation with the Missouri game and fish department, have created bird sanctuaries along their rights of way in rural districts and are preserving the natural food and cover growing along the railroad.

THE GOVERNMENT has asked for an injunction to restrain the Chicago, North Shore & Milwaukee (electric railroad) from issuing securities without approval by the Interstate Commerce Commission, and a hearing was held at Chicago on May 27 before Federal Judge Charles E. Woodward. Witnesses for railroads operating through the same territory as that of the Chicago, North Shore & Milwaukee testified that since the electric line is in direct competition with them in both passenger and freight traffic, the North Shore is in interstate commerce competition.

Looking Backward . . . New Books . . .

Fifty Years Ago

A new structure, built for a general passenger station and office building of the Chicago & North Western in Chicago, will serve to consolidate all the passenger services of that railroad in one station. The North Western has three separate lines out of Chicago, and originally each of these had its own Chicago station. The total cost of the buildings and platforms is \$250,000.—*Railroad Gazette*, June 3, 1881.

The report of the department of railways and canals of Canada for the year ended June 30, 1880, shows that on that date there were 6,892 miles of railroad in operation in the Dominion. Nearly 1,500 miles more were shown as under construction. Of the completed railways, 289 miles are of 5 ft. 6 in. gage, 6,255 miles are of 4 ft. 8½ in. gage and 686 miles are of 3 ft. 6 in. gage. Of the lines under construction the entire mileage is of standard gage. The number of passengers carried in the year ended June 30, 1880, increased 61 per cent over the previous year, while the freight tonnage increased 18 per cent.—*Railway Age*, June 9, 1881.

Twenty-Five Years Ago

Sixteen railway companies in the United States earned over \$40,000,000 each in 1905. Of these, 10 earned over \$50,000,000 each; one, the Pennsylvania, lines east of Pittsburgh, nearly reaching the enormous amount of \$135,000,000. These 16 companies, during the past five years, had an increase in mileage of 21 per cent and an increase in gross earnings of 56 per cent.—*Railway Age*, June 8, 1906.

The United States Senate last week passed with little change the Bates employers' liability bill, which was passed by the House on April 2. The bill, which was strongly urged by all the organizations of railway employees, immensely increases the liability of common carriers for injuries suffered by their employees, as it abolishes the old common law principle which bars recovery of damages from employers for personal injury or death caused by the negligence of a fellow servant.—*Railway Age*, June 8, 1906.

The conference report on the rate bill was completed and presented to the Senate and House on June 2. Some of the sections of the bill were rewritten. Included among these were the pipe line provision, which now states that "The term common carrier, shall include express companies and all persons or corporations engaged in the transportation of oil by pipe lines, or partly by pipe line and partly by railroad, or partly by pipe line and partly by water." It is expected that the pass section will be redrafted to permit railway employees and their families to travel free.—*Railway Age*, June 8, 1906.

Ten Years Ago

Wage reductions approximating 12 per cent were ordered by the Railroad Labor Board in a blanket decision made public on June 1. The effect of this decision, if applied to all employees of all Class I roads, would be to decrease the operating expenses of the carriers about \$400,000,000 annually. The decreases range from 18 per cent for unskilled maintenance of way labor to 7 per cent for road passenger engineers.—*Railway Age*, June 3, 1921.

President Harding cast precedent to the winds on June 1, eluded his secret service men and walked three blocks to hold an informal conference with Chairman Clark of the Interstate Commerce Commission and his associates. He discussed two topics: One was the immediate reduction of freight rates on fruits and other perishable foods, and the other was the advisability of immediately funding the amounts the roads now owe the government, and the payment in cash of the amounts now owed the roads by the government.—*Railway Review*, June 4, 1921.

Les Chemins de Fer Coloniaux de l'Afrique, by Lionel Wiener, Professor at the University of Brussels. 574 pages. 6½ in. by 10 in. Bound in Paper. Published by Goemaere at Brussels and Dunod at Paris.

This is a well-planned descriptive work covering the railways of the various European protectorates and colonies in Africa. The lines in each dominion are described—mileage, gage, equipment, revenues and expenses, etc., with brief historical, economic and political comment. The work is written so that it may be read as a narrative, but the material is so presented and classified that it becomes also a convenient reference hand-book of these railways.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

The Locomotive on the Railroads' Battlefield, by William C. Dickerman. ". . . the battlefield is that of persistent struggle for railroad progress during the decade of 1920 to 1929, a battlefield spread out over forty-eight States . . . The battle is that against waste, against inefficiency, and against a constant menace of keener competition by other transportation agencies . . . I purpose to attempt to give you an insight into the measure of contribution which the steam locomotive has made during a decade which constitutes a record of operating achievement—in other words an insight into the locomotive's part on this field of battle . . ." p. 7, 8. The 1931 Cyrus Fogg Brackett Lecture at Princeton University by the President of the American Locomotive Company. Illustrations and special charts. 36 p. Publisher not given but probably available from the Author, New York City, or Princeton University, N. J. (Abstracted in this issue of *Railway Age*, page 1100.)

Periodical Articles

Commerce Underground, by Ralph L. Woods. "Not so simple, not so widely recognized or understood, is that this apparently uneventful development [i. e. pipe-lines] is having important repercussions, both favorable and unfavorable, in such other and dissimilar fields as the railroad, steel, motor, coal, railway equipment and shipbuilding industries." p. 153. Magazine of Wall Street, May 30, 1931, p. 153-155, 184.

The Financial Situation. Editorial résumé. "The most urgent problem of the day is how to restore the earning capacity of the railroads, so that they may remain going concerns." Commercial & Financial Chronicle, May 30, 1931, p. 3939-3941.

French Loan for Polish Upper-Silesia-Baltic Railway, by Clayton Lane. This involves more than 39 million dollars and certain concession features which are discussed in detail. The line is planned to be completed in three years. Author is United States Commercial Attaché at Warsaw, Poland. Commerce Reports, June 1, 1931, p. 557-559.

Government Railway Earnings. 1930 revenue figures for the 13 Chinese government railways together with notes of increased rates, rehabilitation program, and new Manchurian lines. Far Eastern Review, April, 1931, p. 213-215.

Is Market Psychology Reaching Extremes? by A. T. Miller. "The Barometric Rails" p. 152, 178. Magazine of Wall Street, May 30, 1931, p. 151-152, 178.

Will Railroads Pull Through? by Samuel O. Dunn, Editor of *Railway Age*. "Rate Increase May Save Rails." Forbes, June 1, 1931, p. 57.

Odds and Ends . . .

Automobiles from Wagon Works

Not only have they stopped carrying coals to Newcastle but B. T. Jones, tariff-publishing agent, has applied to the Interstate Commerce Commission for authority to establish on one day's notice rates on automobiles from Wagon Works, Ohio, to Ludington, Mich.

These Modern Inventions

Pullman passenger retiring for the night: "See here, porter, I want you to waken me at five o'clock."

Porter: "Yes, sah, mistah. But I see you all ain't used to these gettin'-up inventions. See this button heah? Well, you jes' press dis heah button when you all wants to get up and then I'll come and call you."—Santa Fe Magazine.

A Night Record

Among the unique records established by railway men is that of Emil O. Davis, foreman of a switch crew in the North yard of the St. Louis-San Francisco at Springfield, Mo. Davis has completed 2,206 consecutive nights' work between 11 o'clock and 7 o'clock, without the loss of a single shift, and including Sundays. This record represents more than six years of steady work.

Trappist Monk Former Railroader

Ira B. Dutton, probably the only ex-railroader ever to become a Trappist monk, died recently at Honolulu. He was an employee of the Louisville & Nashville at Memphis, Tenn., from the close of the Civil war, in which he served as a captain, until 1874. Several years later he entered the Trappist monastery at Gethsemane, Ky., and for the past 45 years, as Brother Joseph, he had worked among the lepers on Molokai island, Hawaii.

Dining Car Murals Honor Pioneers

Mural decorations in the three new air-cooled dining cars now under construction for the Missouri-Kansas-Texas will pay tribute to pioneers of the Southwest. Three of the panels, which will be identical in each car, represent the spirit of transportation—the covered wagon, the early train, and the pony express rider. The fourth panel depicts the Alamo. The panels also contain the state seals of Kansas, Oklahoma, Missouri, and Texas, respectively.

A Railroad-Minded Pheasant

A section gang on the Chicago Terminal division of the Pennsylvania recently found the nest of a ring-necked pheasant on the cinders about 10 ft. from the outside rail of the west-

bound main track, a mile east of Hobart, Ind. The bird appears to be unafraid of the trains which roar past, and is not disturbed by the presence of employees who are regularly engaged in their duties in its vicinity, but promptly leaves the nest when a stranger approaches.

Hudson Bay Railway Worker Finds Ancient Skull

The skull of an Arctic walrus, believed to be between twenty and thirty thousand years old, has been found in Northern Manitoba by a member of a railway construction crew working along the Hudson Bay railway. The discovery was made eight feet beneath the surface of a gravel ridge about eight miles east of Mile 467 on the Hudson Bay railway. This point is about 35 miles due west of the western shore of Hudson Bay. The tusks, some 15 in. in length, are well preserved after thousands of years beneath the sands, but one is considerably worn at the tip.

Too Late

The examiner was questioning a candidate for the position of engine driver:

"You are driving an engine down a steep incline at an excessive speed," he said. "What do you do?"

"Make a brake application," said the candidate.

"Doesn't act!" shot back the examiner.

"Put brake handle into emergency position," replied the other.

"Does not reduce speed sufficiently," went on the examiner quickly.

"Reverse the engine and turn on steam," said the candidate readily.

"The wheels refuse to grip the metals?" came the next question.

"Pour sand on metals," came the reply.

"Sand is damp and won't pass through the pipes." The examiner put the question with an air of triumph. "Now what do you do?"

"Let her rip; we're on the level now."—Railway Gazette.

Kamloops Inspects Locomotives

When the Canadian National began operating its new Mountain type, 6,000 class, locomotives on its Western lines a number were placed on exhibition at points in British Columbia, Alberta and Saskatchewan. In most cases these were the largest locomotives ever seen in the vicinity. At Kamloops, B. C. where the picture below was taken, the display of Mountain Type No. 6058 and American Type No. 384 attracted several thousand townsmen, not to mention prospectors and trappers from the entire district. Included among the spectators were two invalid women in wheel chairs.



Canadian National Mountain Type and American Type Locomotives on Display in British Columbia

NEWS

Abandonment Denial Brings I. C. C. Warning

All desired forms of transport must be supported, S. V. decision states

In denying an application of the Sumpter Valley for authority to abandon 20 miles of its narrow-gage line in eastern Oregon, which has been operated at a loss for several years, but without prejudice to renewal of the application after three years if the situation has not materially improved, Division 4 of the Interstate Commerce Commission has taken occasion to issue a long-term "warning" to communities which give their patronage to trucks but still desire the railroad.

"This adds another to a long series of abandonment cases," the report says, "which should serve both as an illustration and a warning. That every community is entitled to use those means of transportation which it prefers cannot properly be questioned by any one, we think. Those who prefer a steam railroad and can support it have a right to their choice. Those who prefer a line of motor trucks have the same right. Similarly those who prefer still other forms of transportation also have this right. However, when a community has at its disposal, as many or most communities have, several means of transportation and it has exercised its choice in the form of patronage, it must realize that those means of transportation which its choice has eliminated from patronage may not be able to continue to exist without such patronage and that abandonment must follow as a last resort.

"A community which can support every known means of transportation is unquestionably entitled to them all; but a community which can support only one can not insist upon the retention of two if the patronage accorded to the least favored one is not sufficient to enable it to live. . . . A railroad company whose resources have been exhausted due to loss of traffic to other agencies cannot continue to serve. Operating expenses can not be paid out of an empty pocket."

The railroad company had contended that the abandonment of this section of its line was necessary to save the rest of its 80-mile line, showing that the section sought to be abandoned had had deficits ranging from \$19,459 to \$28,673 a year, while the net income of the whole line

(Continued on page 1129)

"I have long been an owner of bonds and stocks of our railroads and have stood by in times of stress for these properties, doing so with courage for the future; but in recent times 'a change came o'er the spirit of my dream.' This resulted from realization that the great mass of stockholders, purblind to what is happening, fail to get behind the managements of their properties. They give proxies, yes—otherwise quorums could not be secured—and let it go at that.

"This is not sufficient. Every owner of bonds and stocks of railroads; every owner of life, fire or other insurance policies; every bank stockholder and depositor in savings banks has a stake in the future permanency of railroads, aside from their interests as travelers or shippers, and an interest in their own as well as the general welfare of the country at large."

From a letter to the Editor in the Wall Street Journal.

Four Months Net 2.11 Per Cent

The net railway operating income of the Class I railroads for the first four months of 1931 was \$146,136,775, or at the rate of 2.11 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. This compares with \$238,805,095, or 3.51 per cent, for the corresponding period of last year. Operating revenues for the four months amounted to \$1,448,260,061, a decrease of 18.8 per cent as compared with the corresponding period of last year, while operating expenses amounted to \$1,448,323,419, a decrease of 17.2 per cent. Taxes amounted to \$110,163,867, a decrease of 6.8 per cent.

For April the net railway operating income was only \$39,074,311, or at the rate of 2.22 per cent. Operating revenues amounted to \$369,652,307, a decrease of 18.1 per cent as compared with April of last year, while operating expenses amounted to \$290,617,542, a decrease of 16.6 per cent.

Eastern roads for the four months period earned net at the rate of 2.51 per cent on property investment, as compared with 4.18 per cent in the corresponding period of last year. Western roads earned at the rate of 1.84 per cent, as compared with 2.92 per cent, and the southern roads earned at the rate of 1.53 per cent, as compared with 2.83 per cent in 1930.

Briefs Submitted in Highway Hearings

Parties participating in co-ordination investigation file arguments

The Interstate Commerce Commission is receiving numerous briefs from the parties that participated in its investigation of the co-ordination of motor transportation, advocating or opposing federal regulation of buses and trucks. While most of the railroads are relying on the brief filed by the Association of Railway Executives, many of them have filed separate expressions, some of them supplementing the general presentation and some of them taking a different position. The Delaware & Hudson, in its brief, said that the commission should not recommend to Congress the enactment of legislation to regulate motor transportation but should, instead, recommend the enactment of legislation "designed to relieve railroad managements of existing regulation which interferes with the normal exercise of their managerial functions," and that the commission should exercise the functions which it has under existing law in such manner as to relieve railroad management from interference with managerial functions.

The Pennsylvania, while advocating some regulation of bus transportation, said that "if truck regulation is undertaken it should be moderate in extent and confined to non-restrictive elements, with the giving of jurisdiction to the Interstate Commerce Commission through the certificate and permit system of all truckers for hire to the end that the commission may have the necessary direct authority further to study truck operation with a view to effecting a fair and economical solution of motor truck regulation." It also expressed the belief that "a more liberal and generous attitude with regard to the efforts of railroads in revising or modifying rail service to meet the changed conditions of modern times" would be in the public interest. The New York Central brief was devoted largely to a discussion of container service, saying that a more widely extended use of containers would bring back to the railroads a considerable volume of freight now temporarily lost, but leaving the argument to the Association of Railway Executives.

The Western Railway Traffic Executives said that reasonable regulation of motor carriers operated for profit in interstate commerce on the public highways

is necessary in the public interest and that "there can be no sound and logical development of motor transportation, and no co-ordination with rail transportation, until motor transportation is subjected to a plan of regulation similar to that applied to other carriers operating for profit."

The Railway Express Agency, Inc., said that co-ordination of a service which has no stability of rate structure nor uniformity of practices or facilities with a transportation service which is strictly regulated in all these respects is obviously impossible.

The Railway Labor Executives' Association, in addition to advocating regulation of motor transportation that competes with the railways also advocated operation of motor transportation by the railways, but said that when rail carriers undertake to use motor service instead of rail service they should be required to afford opportunity of employment under reasonable wages and working conditions to as many displaced employees as can be utilized, and that all forms of transportation service should be conducted under such public regulation as to insure safe, efficient and uninterrupted service and also the maintenance of working conditions under which there shall be reasonable protection for the employees.

Opposition to any regulation of trucks was expressed by the National Automobile Chamber of Commerce. The Merchants' Association of New York said that there should be no regulation of rates for strictly highway transportation but that the laws should be amended to provide that rail or water lines may file rates covering transportation in connection with motor lines, subject to regulation such as is now applied to railways, and that subsidiaries of rail lines operating motor transportation should not be permitted to recoup any losses from revenues derived from rail transportation.

Rail-Barge Rate Order Postponed

The Interstate Commerce Commission has further postponed to October 1 the effective date of its order in Ex Parte 96, requiring the establishment of through routes and joint rates via the federal barge line and connecting rail lines.

Dry Goods Retailers Oppose Increased Rates

Resolutions opposing an increase in freight rates were adopted by the Controllers' Congress of the National Retail Dry Goods Association at a meeting in Washington on May 28.

Garden Clubs on the Milwaukee

As a means of aiding the unemployed, the Committee for Relief Among the Unemployed of the Chicago, Milwaukee, St. Paul & Pacific has made arrangements whereby former and part-time employees are permitted the free use of railroad property not needed for railroad purposes, during the growing season, the property to be used for garden plots as a means of providing employment and food. Garden clubs are being formed under the auspices of the Milwaukee

Road Women's Clubs at many places along the system, and seeds are furnished free by the club to those unable to purchase them.

Fast Freight to Texas

The St. Louis-San Francisco has established a fast freight train between St. Louis, Mo., and points in Texas which saves about 24 hr. on shipments to Texas and points beyond. The train leaves St. Louis at 6 p.m. and arrives in Ft. Worth, Tex., at 5:30 a.m. and Dallas at 6:30 a.m. the second morning.

New York Railroad Club Golf Tournament June 30

The Mid-Summer outing and golf tournament of the New York Railroad Club will be held on June 30 at the Westchester Country Club, Rye, N. Y. In addition to golf, the program calls for a number of other sports, including baseball and quoits.

Louisiana Strawberries

The movement of strawberries from Louisiana over the Illinois Central has established a new record for that railroad this year, the shipments this season aggregating 4,495 carloads, as compared with 2,800 carloads in 1928, the best previous record. In 1930 the Illinois Central moved 2,765 carloads of strawberries from that state.

Grain Schedules Suspended

The Interstate Commerce Commission has suspended, until January 3, 1932, the operation of tariff schedules proposing to apply the St. Louis basis of proportional or reshipping rates from Cairo, Ill., on grain and grain products when received at Cairo, by barge or boat and forwarded over rail lines to destinations in Mississippi valley territory.

Lettuce Rates Complained of, Already Low

Dismissal by the Interstate Commerce Commission of complaints filed by California and Arizona growers of lettuce and other fresh vegetables against their freight rates to eastern destinations is recommended in a proposed report by Examiner Myron Witters. Certain issues as to refrigeration charges, however, have been reserved for hearing in connection with the general refrigeration investigation. "The rates under attack are of long standing and have not previously been the subject of complaint," the examiner says. "In fact it may be said that they have been generally recognized as low rates."

F. M. Feiker Appointed to Commerce Department Position

Frederick M. Feiker, trade journalist of New York, has been appointed director of the Bureau of Foreign and Domestic Commerce, United States Department of Commerce, to succeed William L. Cooper, who will resume his former position as commercial attache at London, England. Mr. Feiker was born in Northampton,

Mass., on June 14, 1881. He received the degree of Bachelor of Science in electrical engineering from the Worcester Polytechnic Institute in 1904. Mr. Feiker has been associated with various technical and industrial publications since 1906. In 1921 he obtained a leave of absence from the McGraw-Hill Company, of which he was vice-president, to become assistant to the secretary of commerce, subsequently serving in various capacities in this department and on special committees relating to it. More recently, Mr. Feiker was managing director of the Associated Business Papers, Inc.

Intrastate Rate Orders Sustained

The Supreme Court of the United States on June 1 sustained two orders of the Interstate Commerce Commission prescribing rates for the intrastate shipment of fertilizers and fertilizing materials in Alabama and of roadbuilding materials in Georgia on the basis of the interstate rates, which had been contested by the state public service commissions.

New Ferry Boat for Prince Edward Island

The Canadian National is to add to its ferry service between New Brunswick and Prince Edward Island, a new car and passenger boat, the Charlottetown, which was launched at Lauzon, opposite the city of Quebec, on May 20. The new vessel has a capacity of 16 cars (on three tracks), 50 automobiles and 750 passengers. It is 340 ft. long and 59 ft. wide and cost \$2,225,000.

Railway Subjects on N. A. C. C. Program

Two topics of interest to railway men were included among those discussed at the annual meeting of the National Automobile Chamber of Commerce in New York City on June 5. These subjects were "Rail Opposition to Highway Transportation" and "New Freight Rate Schedule and Their Effect on the Industry." Alvan Macauley, president of the Packard Motor Car Company and of the N. A. C. C. presided.

National Association for Bus and Truck Regulation Formed

The "National Association for Regulation of Buses and Trucks" has been organized at Paris, Ky., and has filed articles of incorporation (without capital stock) with the clerk of Bourbon County in Paris. One of the incorporators is Richard P. Sohan, general freight and passenger agent of the Frankfort & Cincinnati Railroad. It is proposed to seek members all over the country and to organize a movement to prevail upon the legislatures to put buses and trucks under proper regulation.

Would Forbid Railroad to Drill for Oil

The district court at Palestine, Tex., has refused an application for an injunction filed by J. W. Brightwell and others against the International Great Northern to prevent that railroad from drilling oil wells on its right-of-way. The

basis on which the injunction was asked was that the railroad does not own the right-of-way in fee simple, the strip of land being only held under an easement. Attorneys for the plaintiffs gave notice of appeal to the appellate court at Galveston.

Government Barge Service to Be Extended to Illinois River

The Secretary of War has announced that the Inland Waterways Corporation will begin service on the Illinois river as far as Peoria, Ill., on June 11, when the first fleet of barges will leave St. Louis, scheduled to arrive at Peoria on June 15. A celebration is planned, at which auditory 18, 1930, page 220, was officially and Gen. T. Q. Ashburn, chairman of the Inland Waterways Corporation.

C. N. R. Officers Complete Mexican Work

Two Canadian National officers—E. P. Mallory, director of statistics, and J. F. Pringle, assistant general superintendent of transportation, Central region—have recently completed their work as consultants to the reorganization committee of the National of Mexico. Messrs. Mallory and Pringle made two stays in Mexico in connection with this work, one during 1930 and a second this year.

New St. Louis Trucking Plan

The Terminal Railroad Association of St. Louis, Mo., and Columbia Terminals Company have entered into a contract under which the Terminals Company is given exclusive right to haul l.c.l. freight from on-track to off-track stations in the St. Louis district. Under the contract the number of off-track freight stations in St. Louis and East St. Louis, Ill., is reduced from fifteen to nine. The Terminal Railroad Association is filing with the Interstate Commerce Commission a new tariff providing for substantial reductions in charges for trucking service.

C. N. R. Opens New Hamilton Station

The Canadian National has recently opened, with fitting ceremonies, its new passenger station at Hamilton, Ont., the third to be built by the railroad and its predecessors in that city in less than a century. The new building, which was described in the *Railway Age* of January 18, 1930, page 220, was officially opened, with a golden key, by Lord Bessborough, new governor-general of Canada, assisted by W. A. Kingsland, general manager, Central region, C. N. R., and by John Peebles, mayor of Hamilton.

Cottonseed Rate Revision Proposed

A general revision of freight rates on cottonseed and its products and related articles, including both increases and reductions, is recommended in a proposed report to the Interstate Commerce Commission by Examiners John T. Money and George Esch, made public on May 28, following an investigation under the Hoch-Smith resolution. The case involves rates on hulls, linters

and fiber, and on vegetable cakes, meals and oils, fish and sea animal oils, and inedible greases and tallow. The record in the case comprised 18,500 pages of testimony. Seed and cake and meal are given the same rates and the rates on hulls are made 75 per cent of the scales for those commodities.

Conductors Elect New President

Samuel N. Berry of Toronto, Ont., senior vice-president of the Order of Railway Conductors since 1919, was elected president of that brotherhood at its convention at Kansas City, Mo., which adjourned on May 23. Mr. Berry succeeds the late E. P. Curtis. He entered railway service 48 years ago, serving the Canadian Pacific as a bridge carpenter, brakeman and conductor until 1905 when he became an officer of the conductors' brotherhood.

The convention recommended that freight trains be limited to 70 cars, and a length of 3,150 ft. It also suggested that the present time limit under the hours of service law should be reduced from 16 hours to 12 hours.

Western Railroads to Confer With Eastern on Rate Advance

Presidents and representatives of 23 western railroads met at Chicago on June 1 to hear a report prepared by the traffic officers of the roads on the advisability of applying to the Interstate Commerce Commission for permission to increase freight rates, and as a result decided to confer with the eastern carriers before taking action. The eastern railroads have already expressed a desire to adjust rates and a committee is now working on plans for seeking such revision.

The report of the traffic officers of the western railroads was formulated at a meeting in Chicago on May 27 when these officers agreed that the only effective procedure would be to apply for a horizontal increase in rates. It was felt that applications for individual rates would result in the suspension of the proposed rates for a period of at least two months.

Southwest Shippers' Board

Commodity committee reports submitted at the eighth annual meeting of the Southwest Shippers' Advisory Board at Amarillo, Tex., on May 21, anticipate an increase of 1.8 per cent in business for the third quarter of the year. Commodities, the shipments of which are expected to increase, include grain, flour, hay, straw and alfalfa, fresh vegetables, gravel, lumber and forest products, iron and steel, and paper and products.

Officers elected for the ensuing year include: General Chairman, Cecil E. Munn, president of the Enid Terminal Elevator, Enid, Okla.; general secretary, John W. Daniel, traffic manager of the Peden Company, Houston, Tex., re-elected; and secretary, Charles P. Watson, Dallas, Tex., re-elected.

A general discussion of the grain crop indicated that there will be this year a

bumper crop approximating 75,000,000 bu. for the states of Oklahoma and Texas, with a yield of approximately 15 bu. to the acre.

N. Y. C. Reduces Week-End Tickets

The New York Central has inaugurated a reduction of 25 per cent on round-trip tickets to be sold on Saturdays only, June 6 to September 26, inclusive, and good to return within 30 days, from New York City to Erie, Pa., Detroit, Mich., and all points on its lines west of these cities. Tickets will be honored also on steamboats on the Hudson river and on Lake Erie. The usual stop-overs will be allowed. These tickets will be honored on the Wolverine and in certain cars on the Commodore Vanderbilt, but with these two exceptions the tickets will not be good on any of the 20-hour New York-Chicago trains.

The Pennsylvania has announced a similar reduction in fares between New York and "points in the middle West," such action being taken because of the success of a similar plan which was tried eastbound last summer.

Harriman Medals For 1930

Arthur Williams, president of the American Museum of Safety, announces that the Museum's award of the E. H. Harriman Memorial Medals, given annually to railroads on the basis of their safety records, gives the gold medal this year to the Central Region of the Pennsylvania, with a certificate of honorable mention to the New York Central. This is in the group of railroads reporting more than 10 million locomotive miles during the year.

The silver medal, for roads operating less than 10 million and more than one million locomotive miles, goes to the Los Angeles & Salt Lake, with honorable mention for the Gulf, Mobile & Northern.

The bronze medal, for roads operating less than 1,000,000 locomotive miles to the Missouri-Illinois with honorable mention of the New Orleans Great Northern.

In the fourth group, which comprises switching and terminal roads, a certificate goes to the Lake Terminal (Lorain, Ohio).

Heavy Movement of Wheat Predicted

Southwestern railroads will be called upon to supply cars for what is almost certain to be the largest winter wheat crop on record in their territory, according to a circular issued to the railroads by L. M. Betts, of the American Railway Association. While the present large surplus of box cars would indicate that almost any demand can be met, it should be remembered, says Mr. Betts, that this load of winter wheat will chiefly fall on a very few roads; and all lines connecting with western grain roads are urged to be prepared to honor orders for box cars. The latest government forecast of winter wheat production indicates a total crop of 368,071,000 bushels for the six states of Texas, Oklahoma, Kansas, Nebraska, Colorado and Missouri. This is an increase of 40,044,000 bushels over last year. Should this pro-

duction be realized it will be the largest crop this area ever produced and the present congested grain storage at the principal markets will necessitate a considerable outbound flow.

Trainmen Adopt Plan to Reduce Mileage Limits

The Brotherhood of Railroad Trainmen, in triennial convention at Houston, Tex., on May 29, adopted a resolution, which is equivalent to an order to all members, reducing the monthly mileage limit of trainmen in freight and passenger service, and working days of members in yard service. A. F. Whitney, president of the brotherhood, announced that the plan would be placed in effect by that organization about July 1.

The resolution limits members in yard service to 26 working days or 200 hours a month. Members in freight service would be limited to a monthly mileage of 3,500 miles, and those in passenger service to 5,500 miles. By this means it was estimated that 10,850 trainmen, now out of work, could be re-employed by the railroads.

Resolutions proposing the admittance of motor coach and truck drivers as members of the Brotherhood of Railroad Trainmen were twice defeated.

Drivers of Motor Vehicles Can't Wait for Trains

Twenty-five per cent of the accidents at highway grade crossings in 1930 resulted from operators of passenger automobiles, motor buses, trucks, and motorcycles crashing into the side of trains, according to reports filed by the railroads with the Interstate Commerce Commission and made public by the Safety Section of the American Railway Association. Of the 4,853 highway grade crossing accidents that took place in 1930, reports showed that 1,276 accidents resulted from such a cause, with 248 persons being killed and 1,771 injured. This was a reduction of 160 in the number of such accidents compared with 1929, when there were 277 persons killed and 2,061 injured as a result of automobiles running into the side of trains. In 1930, reports showed that 1,130 passenger automobiles alone struck the side of trains, killing 214 persons. In many instances, the operators of these automobiles first crashed through crossing gates before striking the train. In the preceding year, the number of such accidents involving passenger automobiles totaled 1,270, with 225 fatalities.

Superintendents to Meet at St. Louis

The American Association of Railroad Superintendents will hold its thirty eighth annual convention at the Jefferson Hotel, St. Louis, Mo., on June 9-12. At this meeting reports will be presented by committees on a variety of operating problems, including the handling of merchandise; operating night way freight trains; the necessity for yard air lines; triple crewing of yard locomotives; the reduction of delays to transfer engines in interchange; the revisions of the stand-

ard code of train rules to eliminate obsolete rules and to harmonize practices on different roads; hump versus flat yard operation; car retarder operation—its efficiency and cost of operation; means of promoting the heavier loading of cars; efficiency tests and other means of promoting observance of rules; the functions of a chief train dispatcher in expediting train movement; the elimination of interchange car inspection at junction points; and the use of air brake cars with dynamometer features. There will be addresses by Joe Marshall, special representative of the Freight Claim division, A. R. A., on "A Superintendent in Claim Prevention"; by H. A. Rowe, chairman, Safety Section, A. R. A., on "The March of Safety"; and by B. H. Mann, special engineer, Missouri Pacific, on "Freight Train Economies—Ton Mile

Research in the Train Sheets." At the annual banquet on Wednesday evening, Samuel O. Dunn, editor of the *Railway Age*, will speak on "Our National Transportation Problem."

Electric Operation Inaugurated on N. Y. C. West Side Lines

Electric operation was inaugurated June 1 on the west side lines of the New York Central in New York City. The contact system extends from Spuyten Duyvil, at the north end of Manhattan Island, to and including a part of the yards at Sixty-sixth street. Thirty-three miles of track and about eight and one-half miles of line are included. On the tracks south of the electrified section, oil-battery-electric locomotives are used as motive power. These locomotives were described in the *Railway Age* of August 16, 1930. The straight-electric locomotives used north of Sixty-sixth street were described in the issue of February 14. A total of 35 oil-battery-electric and 42 electric locomotives will be used. At the present time, the electric locomotives are being used only for hauling milk trains and will be continued in this operation until the training of engine crews is completed. In the week beginning June 15, all traffic on the West Side lines will be moved by the electric and oil-battery-electric locomotives; this will be two weeks ahead of the time scheduled.

The old roundhouse at Seventy-second street will be turned over to the electric locomotives; the turntable has been equipped with a third rail. The electric locomotives were designed for freight service only and have no apparatus for heating trains. At times they will be required to handle express trains, some of which require heating in cold weather. To provide for this eight heating trailers have been built. The heating units are automatically controlled and will use oil fuel.

Canadian Lines Curtail Costly Competition

Following its policy of train service reductions in the interests of economy, the Canadian Pacific has announced that its "Trans-Canada" will not operate during the coming summer, between Montreal, Toronto and Vancouver. The "Mountaineer," running between Chicago and the Pacific Coast, will, however, follow its customary summer schedule. The "Imperial" and the "Dominion" will continue to operate from Montreal and Toronto, respectively, to Vancouver.

Explaining the company's policy Vice-President Grant Hall said that "the 'Trans-Canada' is essentially a summer season train and its non-operation this year is simply part of a program of train service reduction which has been under study for a considerable time and which has already been partially put into effect."

Reduction in expenses of various departments of the Canadian National, which the management has been able to make to cope with present business conditions without impairing the service afforded to patrons, will bring about a saving of approximately five million dollars per

Railroad men are not pessimists; they have reason to believe that this year the harvest will be good and that the present business depression is scraping bottom. When general business revives, railroad traffic will come back; but carriers by rail should not be compelled in the future to combat the unfair and inequitable conditions that have confronted them in the recent past. No business man worthy of the name fears competition, but he has a right to demand that competition be fair. And our waterway and bus-and-truck competition can never be fair so long as the government continues in the water-transportation business, carrying the load of the Inland Waterways Corporation's stupendous deficits, or the several states continue to subsidize buses and trucks, permit them to "skim the cream" of the traffic, and operate when and where they please, in an unregulated way, without cost upon a right-of-way built and maintained by taxpayers. All that the railroads have a right to ask, and that they do ask, is that they be permitted to make good in a field of endeavor that affords an equal opportunity for all and special privileges for none, and that they be not compelled to operate, year in and year out, on a hand to mouth basis, but, rather, be permitted to earn in good years surplus enough to tide them over when the lean years come. Five and three-fourths per cent on the value of their property will do this; it will be a most effective guarantee against railroad unemployment or wage reduction, and surely no one will say that such a return is excessive.—James J. Donahoe, general claims attorney, Louisville & Nashville, before the Covington (Ky.) Chamber of Commerce.

year, it has been announced. Reductions in various train services, which have been made throughout the system, are responsible for the chief item among the savings listed, such economies amounting to more than three million dollars in the course of the year's operations.

The curtailment of train service, will total about 3,250,000 passenger train miles per year.

Semaphore 4 ft. 10 in. from Track Not Negligence

In an action for the death of a switchman killed presumably while on the outside of a moving car by being brought into contact with a semaphore near the track, in which the only material ground for charging the company with negligence was that the semaphore was too near the track, the Supreme Court of the United States, reversing a judgment of the South Carolina Supreme Court for the plaintiff, says that it is impracticable always to set such structures as mail cranes and semaphores so far away as to leave no danger to one leaning out, and in dealing with a well known incident of the employment, adopted in the interest of the public and of the employees, it is unreasonable to throw the risks of it upon those compelled to adopt it.

"The semaphore in this instance," the Supreme Court says, "was 4 ft. 10 in. at the base from the outer edge of the track and probably a little more at 4 ft. above the top of the rail. An order of the South Carolina Railroad Commission, made, as it states, in consideration of the safety of the public and employees of the road and of the necessity for employees to give and receive signals, provides that no structure be allowed nearer than 4 ft. from the outer edge of the main or side track, measurement being made 4 ft. above the top of the rail. It will be seen that the railroad company in this case more than complied with the order. It is true that 4 ft. was a minimum distance, but it satisfied the requirement of the Commission, and it would be going far to say that the railroad company was not warranted in supposing that it had done its duty, so far as the commission was concerned, when it put the semaphore 4 ft. 10 in. away. Marshall from his previous experience probably knew of the semaphore as he was required to do by the rules of the road. It was shown that some other semaphores were farther from the track, but the circumstances do not appear, and there is nothing to show that in this case the petitioner [the railroad company] could have made the position safer than it was except by changing the location of the track. As remarked in *Southern Pacific v. Berkshire* 254 U. S. 415,417 [a case relating to a mail crane], the question is not whether a reasonable insurance against such misfortunes should be thrown upon the travelling public through the railroads, but whether the railroad is liable under the statute according to the principles of the common law regarding tort. No negligence is proved against the petitioner." *Atlantic Coast Line v. Marshall's Admir.* Decided May 18, 1931. Opinion by Mr. Justice Holmes.

The Canadian Lines in April

The effect of continued operating economies is apparent in the showing of the Canadian Pacific for the month of April, operating net being down only \$123,924 from last year, although gross revenues show a reduction of \$2,295,821. As compared with March, net revenues are higher by about \$87,000, while gross is higher by about \$4,000.

Gross for the month was \$12,006,288, against \$14,302,109 in April of last year, a reduction of \$2,295,821. Expenses totaled \$10,398,411, a reduction of \$2,171,896, leaving net at \$1,607,876, against \$1,731,801, a decrease of \$123,924. For the preceding month, the decline from the corresponding month in 1930 was \$619,541.

Gross for the four months was \$45,980,615, against \$54,196,305, a decrease of \$8,215,690. Expenses in the same period were cut from \$48,623,321 in 1930 to \$41,474,863 in 1931, a decline of \$7,148,458. Net for the four months, accordingly, was \$4,505,751, a decline from the like period of 1930 of \$1,067,232.

The following table shows gross revenues, expenses and net for the month of April, and for the first four months of the fiscal year, with comparisons:

	APRIL	1931	1930	Decrease
Gross	\$12,006,288	\$14,302,109	\$2,295,821	
Expenses ...	10,398,411	12,570,308	2,171,896	
Net	\$1,607,876	\$1,731,801	\$123,924	
FOUR MONTHS				
Gross	\$45,980,615	\$54,196,305	\$8,215,690	
Expenses ...	41,474,863	48,623,321	7,148,458	
Net	\$4,505,751	\$5,572,984	\$1,067,232	

Gross revenues of the Canadian National for the month of April, 1931, were \$15,233,779, a decrease of \$3,076,245 as compared with the corresponding month of 1930. Operating expenses were \$14,338,889, a reduction of \$1,780,441 as compared with April, 1930. Net revenue was \$894,889, a decrease of \$1,295,803. March net was \$780,939, or an increase for April of \$113,950. For the four months ending April 30, gross revenues were \$57,434,769, a decrease of \$14,056,988 from the figures for the corresponding period of 1930. During the 1931 period, operating expenses were reduced by \$8,210,428, to a total of \$56,441,417 for the four months, and net revenue was \$993,351, a decrease of \$5,846,559 as against the figure for the same period of 1930.

Optimistic on Tank Car Outlook

The next five years will see an increase in the number of tank cars in use in the United States over present levels and an increase in net earnings of the leading companies engaged in the operation of tank car equipment over the average net earnings of companies occupying similar leading positions in other industries, according to Ernest L. Nye, of Freeman & Company, a firm active in railroad equipment trust financing.

As a result of an extended trip in mid-continent territory, Mr. Nye expressed the firm conviction that the tank car industry has nothing to fear from the gasoline pipe line as a serious competitor.

"Figures reported by the leading lease

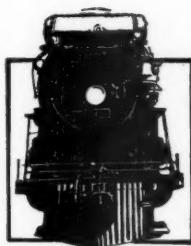
line companies for 1930 show that during this year of depression these companies returned net earnings greatly in excess of the average net earnings of leading companies engaged in other lines of business," he said. "It is general knowledge, despite some evident opinion to the contrary in uninformed quarters, that the transportation of petroleum and petroleum products by pipe lines is not a new idea. The tank car industry grew to its present proportions during the development and expansion of a national network of crude oil pipe lines, which, according to many, were destined to supplant the tank car, and while the emphasis is now being placed on the proposed construction of gasoline pipe lines, experienced oil men view the building of these lines as an experimental undertaking which, even if successful, will have no substantial bearing on the demand for tank cars. That a limited amount of additional mileage in gasoline pipe lines will be placed in service over the next five years is granted, but the use of these lines, far from diminishing the number of tank cars in the service, should in fact increase the use of such cars.

"The largest of the proposed gasoline pipe lines, for example, it is understood, will have a capacity equal only to 150 tank cars per day and this, as pointed out, will be more than offset by the additional distribution needed in short hauls. In fact, the total mileage of all the gasoline pipe lines now in operation, and all the proposed gasoline pipe lines, constitutes a total daily capacity of relatively small importance when the daily operation of the 185,000 tank cars of the country is taken into consideration.

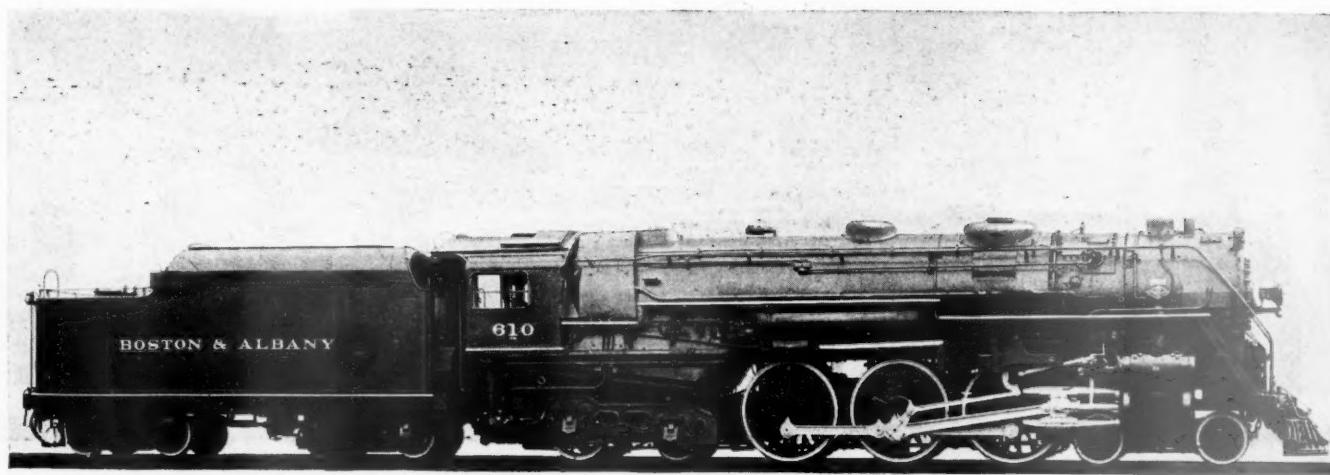
"A railroad tank car can be used in hundreds of different industries. These cars can follow business and markets from one section of the country to another, whereas a pipe line once laid is dependent upon the business of the locality it serves. If a new oil field fades out, a center of population shifts or an important refinery is relocated, the tank car quickly moves away from the abandoned situation to seek more active fields. The pipe line, however, cannot be moved except at a prohibitive cost."

Parcel Post Hearings Postponed

Hearings before the Interstate Commerce Commission on the proposal of the Postmaster General for a general revision of parcel post rates designed to offset the department's estimated deficit of \$15,000,000 a year in that class of postal service have been postponed until Fall, over the vigorous protest of counsel for the Postoffice Department, to enable the shippers who are opposing the increases involved to complete a study designed to show that the alleged deficit is due merely to improper cost accounting. The postponement was granted by Commissioner H. M. Tate, who has been in charge of the hearings on the department's proposals, at the close of the testimony on behalf of the department on May 28, at the request of Luther M. Walter, counsel for the National Industrial Traffic League and



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- Lima Locomotive Works, Incorporated, is delivering 10 Hudson Type locomotives to the Boston and Albany Railroad. This type of locomotive has proven its ability to handle heavy passenger trains on exacting schedules and do so economically.

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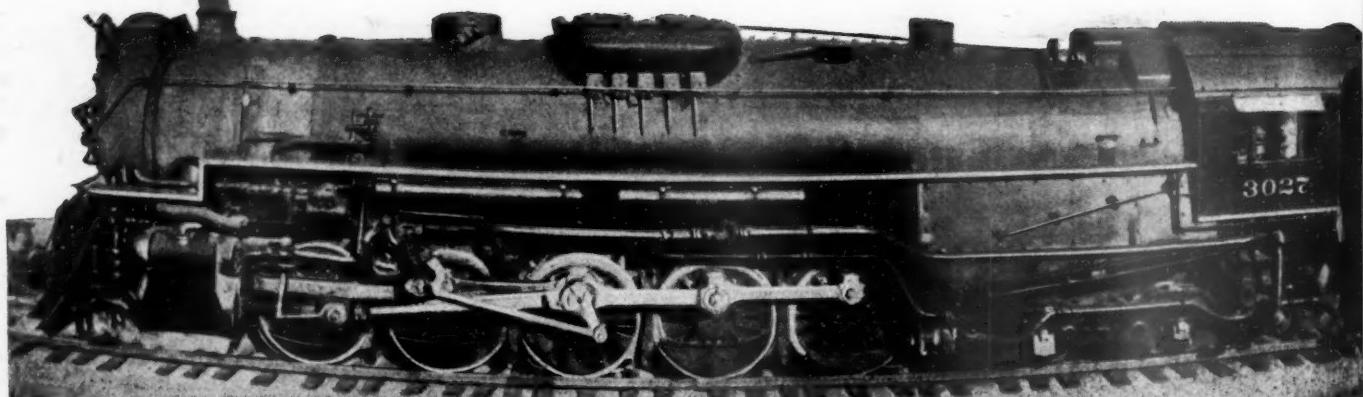
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■ MALLETS WERE formerly used by the C. & O. to haul its heavy loads of coal traffic.

■ But the keynote of modern operation is speed—the old drag-freight days are gone.

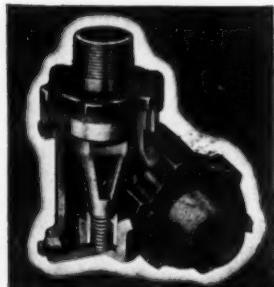
■ To handle the 10,000 ton trains that the Mallets could haul and yet make the desired speed and keep maintenance costs in check, the C. & O. wanted a two cylinder engine more powerful than any heretofore built.

■ The 2-10-4, a modern Super-Power type, met these conditions.

■ It had plenty of power to haul the heavy trains at speed, and, by incorporating The Locomotive Booster into its fundamental design, the new engine equalled the Mallet in starting power.

■ Operating economies demand more intensive power production from the new locomotives. The Locomotive Booster gives power that you can get in no other way. It is an essential to a truly economical locomotive.

THE FRANKLIN SLEEVE JOINT
does not become rigid
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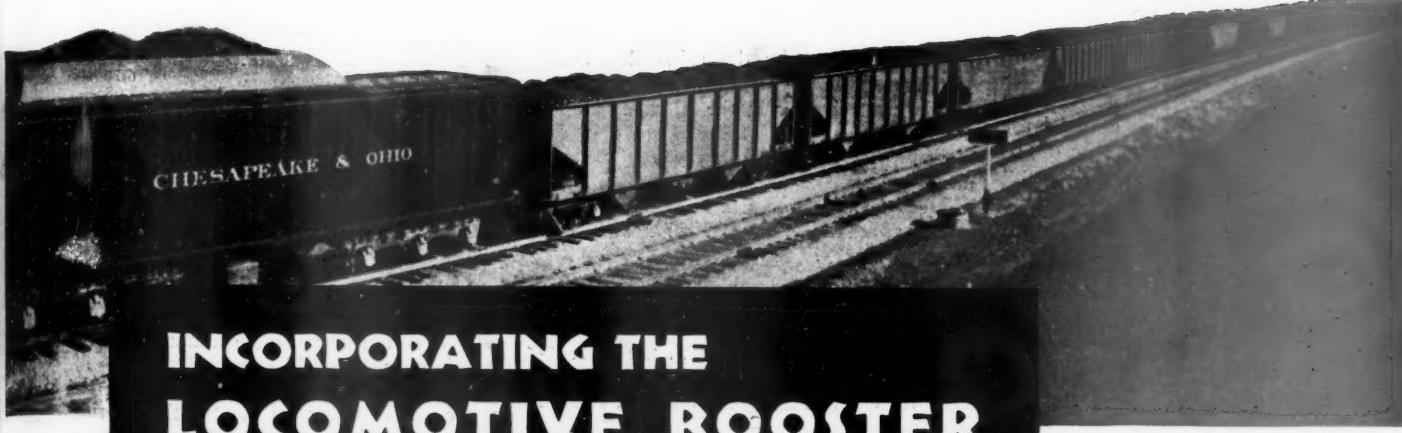
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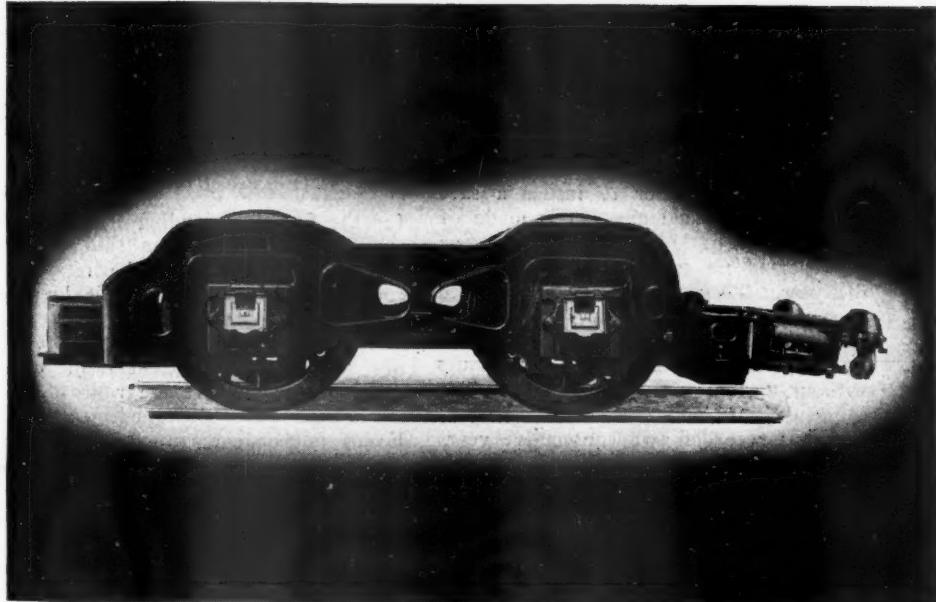
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other commercial organizations, who asked for four or five months' time to complete an accounting study by R. W. Fletcher of the department's cost ascertainment system, and also to send questionnaires to users of parcel post to show the effect of the higher rates proposed for the shorter hauls and smaller packages. Mr. Walter said it was expected to demonstrate that by correct accounting the parcel post would show a profit and also that even if there were a deficit the increases in rates would tend to increase it. The department is also proposing to reduce its rates on the longer hauls and heavier packages where it is more in competition with the express service, and to increase the size and weight limits of packages. Further hearing on size and weight proposals, which are opposed by the Railway Express Agency, will be held on June 9, but the general hearing will not be resumed until after September 14, Commissioner Tate announced after an argument in which counsel for the department moved that if the opposition were not ready with its testimony the case be submitted for decision forthwith.

This postponement will tend to help accomplish the result intended in a resolution adopted by the Senate on February 16, just before the hearings began, expressing the "sense of the Senate" that the application of the Postmaster General for the commission's consent, which was filed last November, "should not be pursued to a final adjudication, with any application of new rates for parcel post, until same have been reported to Congress and been passed upon by Congress."

During the argument on the question of postponement Commissioner Tate said he was anxious to have the case ready for argument when the commissioners return from their vacations in the Fall and spoke of the desirability of a decision before Congress meets; but after a long conference during the noon recess he said he had changed his view somewhat. He said it was the duty of the Postmaster General, under the law, to propose a revision of rates whenever he was convinced that the parcel post service was not self-sustaining but that it is the duty of the commission to pass upon the matter in the public interest. If this were an ordinary lawsuit of Smith versus Jones, he said, Jones would be expected to be ready to present his evidence now, but because the public interest is involved the question is whether the commission can content itself with an investigation which might not be sufficient without further testimony. Not because the protestants deserve it, but because the commission desires a more complete investigation, he said, the additional time would be granted.

The controversy involves the sufficiency of the department's cost ascertainment system, which its witnesses admitted involved the exercise of judgment in apportioning costs to classes of service. Mr. Walter said that a shifting of one per cent of the expenses of

the department would be enough to wipe out the deficit.

Accident Records Condensed

The eighth annual "Green Book" issued by the National Safety Council (Chicago) is a condensed exhibit of all the principal totals of all departments of the statistical matter prepared by the Interstate Commerce Commission relating to railroad accidents in the year 1930, the data having been gathered in connection with the Council's fourth annual award of plaques for excellence of records. C. W. Bergquist, president of the Council, in his introduction, pledging the co-operation of the Council in all efforts to preserve lives, observes that this fourth annual award, in the competition for the best record, affords further convincing evidence of the value of the contest principle; and he notes the almost general acceptance of the principle by the railroads of the country.

The first chapter in the 20-page pamphlet gives the names of the winners in the different groups, as already reported in the *Railway Age* (May 2, page 880). Next comes a chronological record of the awards made by the National Safety Council since 1927.

The tabular statements showing the standing of the different roads in each group give the casualty rates for 1923 and 1929 as well as for 1930, with the percentage of reduction, by each road, in casualties to employees, 1930 compared with 1923.

A seven-year review calls attention to the fact that now, for the first time since the Interstate Commerce Commission has published records of employees killed and injured (year 1888) the number of employees killed was less than one thousand in a year; more than 50 per cent fewer than in 1923 when the current "drive" was started. This result may be taken as in part due to a reduction in the total man-hour exposure, but there has been an increase in operating efficiency of 44.2 per cent as measured by the car miles operated per million man-hours; 8,482,974 in 1930 as compared with 5,882,065 in 1923. When business again increases, the roads will be faced with the new-man problem; and every present employee should be so trained in safe methods of operation that each will be a willing instructor for the new man. "The spirit of safety should be thoroughly established today in order to insure a safe tomorrow." Special mention is made of the fact that, of 174 roads now reporting 54 reported no employees killed during the year. These roads had a combined exposure of 133 million man-hours. The Los Angeles & Salt Lake (Union Pacific System) reported 13,617,000 man-hours without a single employee fatality. The Minneapolis & St. Louis, which was second, has recorded two consecutive years without a reportable fatality to an employee.

Note is made of the fact that the Atchison, Topeka & Santa Fe recorded 118 consecutive days without a reportable employee fatality—41 million manhours.

The year 1930 completes a 10-year

period in which the government has published these casualties on a man-hour basis; and the five roads giving the best record in each of the nine groups are shown in a table which compares the first five-year period with the second five-year period, with the percentage of reduction or increase shown on each road.

Special honorable mention is made of seven leading railroads which since January 1, 1917, have operated without a reportable passenger fatality in train accidents for the number of years stated. These roads, ranked according to their passenger miles, are as follows:

Rank		Years Clear	Passenger Miles
1	Southern Pacific (Pacific Lines)	9	13,782+
2	Baltimore & Ohio	11	10,164+
3	Erie	12	9,747+
4	Boston & Maine	12	9,408+
5	Chesapeake & Ohio	14	6,881+
6	Atchison, T. & S. F. (Eastern Lines)	14	6,769+
7	Boston & Albany	14	5,085+

Clear records (no passenger killed in train accidents) are shown for 14 consecutive years by 68 Class I railroads. These roads in that time recorded over 51 billion passenger miles.

Supplementing these records there is presented a chart showing in heavy black lines the great losses in deaths and injuries from collision in the years 1907-1919 and the remarkable diminution in this item since 1919.

Further items of interest concern safety records in shops on the Southern; the large number of roads which attained the goal of 35 per cent reduction, 1923 to 1930; the other long list of roads that made a 50 per cent reduction, and still another showing 75 per cent. Finally, the percentages of improvement during the past seven years are shown in separate statements by districts—southern, western and eastern—and there is a table estimating the reduction in reportable casualties, each year, as compared with the actual casualties in 1923. According to this estimate the 9,205 fatalities in the years 1924-1930 would have been 11,378 if the 1923 rate had been kept up without diminution.

Abandonment Denial Brings I.C.C. Warning

(Continued from page 1124)

for the five years ending 1929 was only \$14,551. The commission said, however, that the section should be retained in common-carrier service a little longer in order to give the interests and communities served a further opportunity to demonstrate whether sufficient traffic can be developed to support the railroad.

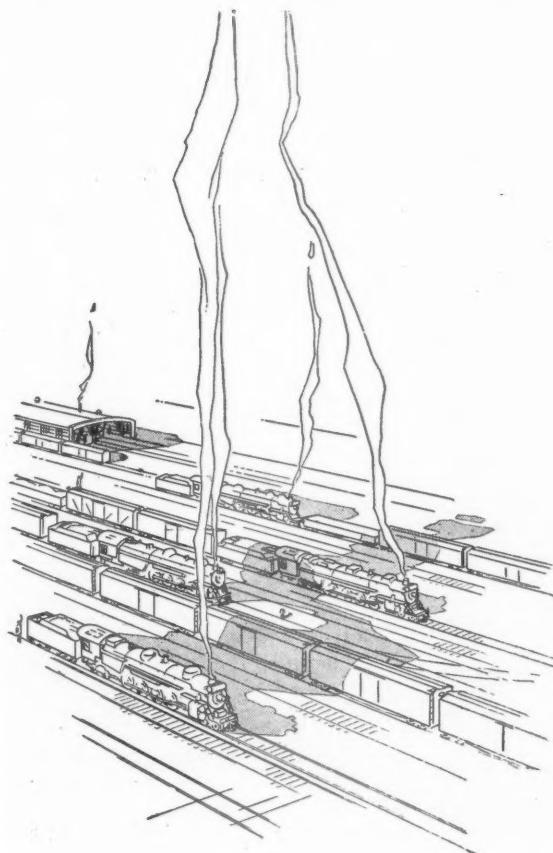
The railroad is controlled by the David Eccles lumber company, and the report says the testimony seems to indicate that the road would be retained for a private logging railroad anyway. Therefore it said that common carrier freight service could be furnished on one or two days in the week without great additional expense. Reference was also made to the

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WHERE THE railroads have had a combustion problem they put it up to the American Arch Company. Now industry, in general, does the same thing.

American Arch Company designed the roof for the world's largest heat-treating furnace. In fact every leading steel company in the country uses American Arch Company furnace roofs.

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All thru industry there is a growing demand for the engineering service on combustion matters that for years has been an integral part of American Arch Company service to the railroads.

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possibility of a reduction in administrative expense and to the "avoidance of improvident contracts such as that referred to by counsel on argument, under which 50 per cent of an item of \$39,000 for back mail pay was allowed to its attorneys."

Commissioner Mahaffie dissented, saying that no facts are referred to which indicate that the current losses can be overcome in the future and that the record supports a certificate authorizing abandonment. The application was filed February 18, 1930, but the three years for a further trial runs from the date of the report, May 19, 1931.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 5605, Grand Central Terminal Building, New York City.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Blvd., Chicago. To meet with Air Brake Association, Car Department Officers Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R. M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago. Next convention, June 16-18, 1931, West Baden Springs Hotel, West Baden, Ind.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J. 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—A. G. Peck, Acting Secretary, 811 W. 35th Street, Kansas City, Mo. Next meeting June 9-12, 1931, Jefferson Hotel, St. Louis, Mo.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. R. R., 836 Federal St., Chicago. Next convention, October 20-22, 1931, Baltimore, Md.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York. Next convention, September 26-October 2, 1931, Auditorium, Atlantic City, N. J.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y. Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York. Next convention June 8-9, 1931, Pennsylvania Hotel, New York, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York. Next convention June 23-25, 1931, Stevens Hotel, Chicago, Ill.

Safety Section.—J. C. Caviston, 30 Vesey St., New York.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York. Division II.—Transportation.—G. W. Covert, 59 East Van Buren St., Chicago.

Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering.—E. H. Fritch, 59 East Van Buren St., Chicago. Next meeting, March 15-17, 1932, Chicago. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section.—E. H. Fritch. Next meeting, March 15-17, 1932, Chicago.

Electrical Section.—E. H. Fritch. Signal Section.—R. H. C. Balliet, 30 Vesey St., New York.

Division V.—Mechanical.—V. R. Hawthorne, 59 East Van Buren St., Chicago. Next meeting, June 23-25, 1931, Congress Hotel, Chicago.

Equipment Painting Section.—V. R. Hawthorne, 59 East Van Buren St., Chicago. Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims.—Lewis Pilcher, 59 East Van Buren St., Chicago.

Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York, N. Y.

Car Service Division.—C. A. Buch, 17th and H. Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry. 319 N. Waller Ave., Chicago. Next convention, October 20-22, 1931, Royal York Hotel, Toronto, Ont. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. W. Large, Gen. Agt., C. R. I. & P. Ry., Chicago, Ill. Annual meeting, June 17-19, 1931, Hotel Benjamin Franklin, Philadelphia, Pa.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association, Division IV.—E. H. Fritch, 59 East Van Buren St., Chicago. Next meeting, March 15-17, 1932, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.—Miss E. Phillips, N. Y., N. H. & H. Magazine, Boston, Mass.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Secretary, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Paul D. Mallay, Johnsville Corp., 292 Madison Ave., New York.

AMERICAN WOOD PRESERVES' ASSOCIATION.—H. L. Dawson, 1104 Chandler Building, Washington, D. C. Next meeting, January 26-28, 1932, Hotel Jefferson, St. Louis, Mo.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual convention, June 17-19, 1931, Royal York Hotel, Toronto, Ont.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreuccetti, C. & N. W., Room 411, C. & N. W. Station, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, Transportation Building, Washington, D. C.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—S. A. Barber, High Grade Manufacturing Co., 10418 St. Clair Ave., Cleveland, Ohio. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, 2nd Monday in each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 South Morgan Street, Chicago.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago. Regular meetings, 2nd Monday in month, except June, July, and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 So. Main St., Los Angeles, Cal. Regular meetings, second Monday of each month, except July, August and September, Room 299, 610 So. Main St., Los Angeles.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—F. G. Wiegman, 720 N. 23rd St., East St. Louis, Ill. Meetings first Tuesday of each month, except July and August, American Hotel Annex, 6th and Market Sts., St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—T. J. O'Donnell, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 453 E. 6th St., Cincinnati, Ohio. Meetings 2nd Tuesday in February, May, September and November.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, second Monday each month, except July, August, September, Auditorium, Brotherhood of Railroad Trainmen's Building, West 9th St., and Superior Ave., Cleveland.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. T. Winkless, Room 700 La Salle Street Station, Chicago. Annual meeting, September 15-16, 1931, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

MASTER BOILER MAKERS ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

MASTER CAR BUILDERS' AND SUPERVISORS' ASSOCIATION.—(See Car Department Officers' Association.)

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York. Annual convention, October 20-23, 1931, Richmond, Va.

NATIONAL ASSOCIATION OF RAILROAD TIE PRO-

DUCERS.—Roy. M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 1014 South Michigan Ave., Chicago. Exhibit at A. R. E. A. convention.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: J. L. Walsh, Supt. Safety, M.-K.-T. R. R. Dallas, Tex. Annual congress October 12-16, 1931, Hotel Stevens, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, except June, July, August and September, Copley Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. I. McKay, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, 29 W. 39th St., New York City.

PACIFIC RAILWAY CLUB.—W. S. Wolfner, P. O. Box, 3275, San Francisco, Cal. Regular meetings 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1124 Woodward Building, Washington, D. C. Next convention, June 23-26, 1931, Palmer House, Chicago.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 1112 Shoreham Building, Washington, D. C.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1841 Oliver Building, Pittsburgh, Pa. Regular meeting, 4th Thursday in each month except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R. Baltimore, Md. Annual meeting, October 20-22, 1931, Cleveland, Ohio.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division. Purchases and Stores Division and Motor Transport Division, American Railway Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A. Division 1.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa. Next convention, September, 1931, Buffalo, N. Y.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Next convention, September 22-24, 1931, Hotel Stevens, Chicago. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Drawer 24, M. P. O., St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August, Statler Hotel, St. Louis.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, West Nyack (Rockland Co.), N. Y. Meets with A. R. A. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. Ry., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Div. V. Equipment Painting Section.

TORONTO RAILWAY CLUB.—J. A. Murphy, 1405 Canadian National Express Building, Toronto. Regular meetings 3rd Monday of each month, except June, July and August.

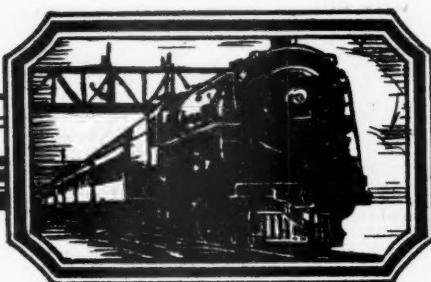
TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Ox-weld Railroad Service Co., Carbon & Carbide Building, Chicago. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, O.

WESTERN RAILWAY CLUB.—W. J. Dickinson, 343 So. Dearborn St., Chicago. Regular meetings 3rd Monday each month, except June, July, August and September. Hotel Sherman, Chicago.

THE PANHANDLE GRAIN DEALERS' ASSOCIATION. at its annual convention in Amarillo, Tex., on May 26, adopted a resolution pledging its support to the railroads in their fight against the inroads of motor truck transportation. The grain dealers also went on record as favoring legislation declaring all motor vehicles operating over the highways for hire to be common carriers and placing them under the jurisdiction of state and federal regulatory bodies as to rates, rules and regulations.

Continued on Next Left Hand Page



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To ECONOMIZE— MODERNIZE

The factor of obsolescence is an important one in any industry. In the absence of thorough investigation it is almost sure to be underestimated.

Our railroads each week report to the American Railway Association the number of locomotives in need of repair and the number of serviceable locomotives in storage. But this report, dealing with the locomotives' physical condition, has very little to do with the story of obsolescence—it is earning power that really counts.

Therefore, consider the earning power of the locomotives you have as compared with the earning power of the locomotives you might have. Measured by this standard the condition of the motive power in general is astounding.

With the need for operating economies greater than ever, the majority of the railroads need today and will need tomorrow the utmost that the improved locomotive has to offer.

Cost reduction is and always will be a sound investment.

American Locomotive Company
30 Church Street New York N. Y.

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Foreign

Air-Rail Freight Service in Britain

Railways of Great Britain on April 1 entered an arrangement whereby a co-ordinated air and rail service for the transportation of parcels and freight was inaugurated. The new service is expected to speed up the delivery of parcels and freight between points in Great Britain and the airway stations of the Imperial Airways in Europe, Egypt, Irak, Persia, India and Central Africa.

The plan designates certain stations to which the service will be available. Parcels and freight received at these points are forwarded by special express train to London where they are delivered to the Imperial Airways. The same service is available on parcels inbound to Great Britain.

Management Board for Railways of Colombia

An act recently passed by the Congress of Colombia established a board to manage on a commercial basis all government-owned railways in that country. The new board is to be composed of five members including the Minister of Public Works, who shall act as chairman. One member of the board, appointed by the government, will act as general manager of the railways; he will have charge of operations under the immediate direction of the board and the board whenever it deems it advisable may request the government to appoint a new general manager.

The act defines in detail the duties of the board and the manner in which railway net revenues will be allotted between the up-building of the railway and the general treasury of the country.

Cheaper Group Travel on German Railroads

Reductions in rates for parties traveling on the German railroads became effective on May 1 when the minimum number of passengers required for the granting of special group rates was reduced from 20 to 15, and the reduction in fares, was increased from 25 per cent to 33 1/3 per cent for groups of more than 50 persons. In addition, one free ticket is now granted to groups of 31 to 50 passengers, two for groups of 50 to 100, and three for parties of more than 100. For special trains with a minimum of 300 passengers in the third, 200 in the second or 100 in the first class with total receipts amounting to 200 marks or over, the reduction in fares has been increased from 33 1/3 to 40 per cent, and to 50 per cent for parties of respectively 600, 400 or 200, provided the total receipts are at least 400 marks.

For extra trains in the school vacation period the reduction is now 20 per cent instead of the previous 10 per cent. The fee for reserving whole compartments in advance in fast trains has been abolished, as also the fee for reservations of places for groups of 15 or more. The requirement that reduced rates may be granted to schools, youth organizations, etc., for fast trains only for trips of at least 150 kilometers has also been abolished.

Equipment and Supplies

LOCOMOTIVES

THE PENNSYLVANIA'S recent order for 150 electric locomotives and its negotiations for 86 in addition to 96 now in use and under construction makes the total of 326 reported in the *Railway Age* of May 30, page 1091. The above mentioned item incorrectly stated that 61 were in service and 96 under construction.

FREIGHT CARS

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY has ordered two hopper cars of 70 tons' capacity from the Bethlehem Steel Company.

THE NORTHERN PACIFIC has ordered 500 underframes for box cars and a quantity of miscellaneous parts for superstructures from the American Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of May 16.

IRON & STEEL

THE MISSOURI PACIFIC is inquiring for 900 tons of structural steel for bridge work in Arkansas.

THE GREAT NORTHERN has ordered 3,000 tons of tie plates and 500 tons of spikes from the Pacific Coast Steel Company.

THE TEXAS & PACIFIC has ordered 250 tons of structural steel for an express station at Ft. Worth, Tex., from the North Texas Iron & Steel Company.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 170 tons of structural steel for miscellaneous bridge work from the McClintic-Marshall Company.

THE COLUMBUS & GREENVILLE has ordered 800 tons of structural steel for a bridge over the Yazoo river, at Greenwood, Miss., from the Virginia Bridge & Iron Company.

MOTOR COACHES

THE PACIFIC ELECTRIC, subsidiary of the Southern Pacific, has received delivery from the Twin Coach Company, Kent, Ohio, of 12 Model 30 urban type twin coaches.

THE GENERAL MOTORS TRUCK COMPANY, Pontiac, Mich., has made deliveries of 36 observation type Yellow motor coaches as follows:

No.	Capacity	Purchaser
18	33-passenger	Pennsylvania Greyhound Lines
7	33-passenger	New England Transportation Co.
6	33-passenger	Pacific Greyhound Lines
4	33-passenger	Samoet Company (subsidiary of Maine Central)
1	25-passenger	Delaware Valley Transportation Company, Stroudsburg, Pa.

Supply Trade

THE J. S. COFFIN, JR. COMPANY has moved its office to its new building at 326 South Dean street, Englewood, N. J.

MITSUI & COMPANY, LTD., will move its offices from 65 Broadway and 180 Madison avenue to the Empire State building, 350 Fifth avenue, New York City on June 8.

ADOLPH RIDER, JR., representative of the Lukens Steel Company has been elected president of Lukens & Co., Inc., which has been organized to handle direct mill sales in New Orleans, La.

In the *Railway Age* of May 16, the name of James J. Regan, manager railway sales of James B. Sipe & Company, Inc., 221 Fourth avenue, New York, through a typographical error was reported as James J. Reegan.

W. J. PARKER has been appointed commissioner of the Forging Manufacturers Association, succeeding G. H. Weiler. The new offices of the association are at 7 East Forty-Fourth street, New York City.

FRANK BAAKES, JR., a representative of the American Steel & Wire Company, with headquarters at Cincinnati, Ohio, has resigned to become a representative of the Keystone Steel & Wire Co., Peoria, Ill., with headquarters at Chicago.

R. H. RIPLEY, president of the General Steel Castings Corporation, Eddystone, Pa., has been elected chairman of the board to succeed Clarence H. Howard, resigned. Harrison Hoblitzelle, vice-president and general manager, at Granite City, Ill., has been elected executive vice-president, with headquarters at Philadelphia, Pa.

THE SUPERIOR RAILWAY PRODUCTS CORP., a newly organized company, with offices at 7501 Thomas Boulevard, Pittsburgh, Pa., has taken over the manufacture and marketing of the railway products formerly manufactured by the Rees Manufacturing Company, Pittsburgh. WILLIAM R. GELLATLY, formerly vice-president of the Rees Manufacturing Company, is president of the new organization.

FOLLOWING the acquisition of the Reliance Manufacturing Company by the Eaton Axle & Spring Co., HOWARD J. McGINN, vice-president and general manager of Reliance, with headquarters at Massillon, Ohio, has been appointed vice-president in charge of sales of the Eaton Company, with headquarters at Cleveland, Ohio, while W. H. CRAWFORD, president of Reliance, remains in charge of Reliance operations.

AN ARRANGEMENT has recently been concluded by the United States Steel Corporation with Fried, Krupp, A. G., Germany, whereby the subsidiary companies of the Steel Corporation are licensed by



GEO insures DOUBLE SATISFACTION

GEO... the modern solution to track problems... guarantees satisfaction from two distinct angles. For the passenger is provided smooth and practically noiseless track, greater speed and greater safety. This should be reason enough to dictate the selection of **GEO**. What is more important than passenger satisfaction? Yet this modern method of track construction has many other points of superiority. Control of rail movement, reduction in rail wave motion, longer life of rails and ties, radically reduced maintenance costs . . . these are advantages which main-

nance of way men cannot afford to overlook. **G E O** is not a new, experimental device. Many thousands of miles of **G E O** track have been laid in Europe during the past five years and new construction is adding several thousand miles yearly. Here in America, test sections on leading railroad systems are demonstrating **G E O** to be the most important contribution to railroad track construction of the past decade.

Descriptive literature will be sent at your request, and Carnegie Engineers are at your service at all times.

CARNEGIE STEEL COMPANY - PITTSBURGH

Subsidiary of United States Steel Corporation

143

GEO TRACK CONSTRUCTION

Krupp under various patents of Strauss, Johnson, Armstrong, Fry, Kuehn and Smith for rust-resisting and heat-resisting and other alloy steels, and for the heat treatment thereof. This arrangement, which includes the collaboration of Krupp with respect to technical matters in connection with corrosion-resisting and heat-resisting steels, etc., will apply to the products of the Illinois Steel Company, Carnegie Steel Company, American Steel & Wire Company, American Sheet & Tin Plate Company, National Tube Company, and Lorain Steel Company. The major products manufactured by these companies in corrosion-resisting and heat-resisting steels include shapes, plates and bars, strip, wire products, rope, sheets, tubes and castings.

OBITUARY

Harrington Emerson, consulting engineer, writer and educator, who died at New York on May 23 at the age of 77 was born at Trenton, N. J. on August 2, 1853. He attended the Royal Bavarian Polytechnic in Germany from 1872 to 1875 and then for a year attended universities in Italy and Greece. From 1876 to 1882 he was professor of modern languages at the University of Nebraska, and for the next four years was engaged in banking and land business. From 1896 to 1898 he examined many industrial plants and mines in the United States, Mexico and Canada as a United States representative of a British syndicate. During the years 1898-1901 he put into operation some of the first long distance mail routes in Alaska and down



Harrington Emerson

the Yukon. He reported on all the known coal deposits of the North American western coast and also on the northern submarine cable route to Asia, the latter report being largely followed by the War Department in laying its Alaskan cables. From 1900 to 1923 he was president of Emerson Engineers, efficiency engineers. Mr. Emerson gained recognition through results obtained by efficiency methods installed on the Atchison, Topeka & Santa Fe and was

the author of *Efficiency as the Basis for Operation and Wages*, published in 1909; *The Twelve Principles of Efficiency*; Colonel Schoonmaker and the Pittsburgh & Lake Erie Railroad, and *Lessons in Personal Efficiency*. In 1921 Mr. Emerson was appointed a member of the Committee for Elimination of Waste in Industry of the Federated American Engineering Societies, the committee, headed by Herbert Hoover, having been assigned to investigate and report on railroads and bituminous coal mining. He was a member of the American Society of Mechanical Engineers; Societe des Ingénieurs Civils de France (president American Section); Mechanical and Purchases and Stores Divisions, A. R. A.; American Economic Association; American Association of Labor Legislation; American Electrochemical Society; American Institute of Metals; Illuminating Engineering Society; New York Railroad Club; American Electric Railway Association, and the Franklin Institute.

Construction

BOSTON & MAINE.—In connection with grade crossing eliminations at Valley Falls, N. Y., this company has awarded to the Phoenix Bridge Company, Phoenixville, Pa., a contract for the erection of the superstructure for a new bridge at Main street, and to the Lathrop & Shea Company of New Haven, Conn., a contract for the construction of substructures, approaches, new way, driveways and drainage facilities incidental to grade separations at Main and Burton streets.

KANSAS CITY SOUTHERN.—The general contract for the construction of a 1,060,000-bu. reinforced concrete addition to this company's grain elevator in the Northeast Industrial district at Kansas City, Mo., which is under lease to the Norris Grain Company, has been let to the M. A. Long Company, Baltimore, Md. The addition will be 185 ft. high, 85 ft. in width and 182 ft. in length. With a grain dryer unit, its complete cost will be about \$200,000. This railroad is also having plans prepared for a 600,000-bu. addition to its grain elevator in the same district at Kansas City which is under lease to the Moore-Seaver Grain Company. This addition will cost about \$120,000. Bids have not yet been requested for this construction.

NEW YORK CENTRAL.—The New York Public Service Commission has approved the bid submitted by the Bates & Rogers Construction Company, New York, for the elimination of Purdy's crossing of this company's tracks in North Salem, N. Y.

PENNSYLVANIA.—Contracts have recently been awarded by this company to the Ferguson & Edmondson Company, Pittsburgh, Pa., for the relocation of approximately 2.4 miles of double-track line in the vicinity of Liverpool, Pa., at a

probable cost of \$157,000; to the John F. Casey Company, also of Pittsburgh, for the elimination of grade crossings at Crafton avenue and Emily street, in the borough of Crafton, Pa., at an estimated cost of \$136,000, and to the Minton-Scobell Company, Cleveland, Ohio, for the construction of a banana-ripening house, to cost about \$33,000, at Twenty-first and Smallman streets, Pittsburgh.

PENNSYLVANIA (West Jersey & Seashore)—READING (Atlantic City).—The Board of Public Utility Commissioners of New Jersey has designated for elimination grade crossings of the Atlantic City Railroad at Arctic and Baltic avenues and Higbee road, and of the West Jersey & Seashore at Arctic, Baltic, Kentucky, Illinois, New York, Tennessee, Indiana and Ohio avenues and Higbee road, all in Atlantic City, N. J. Work on the project, which is estimated to cost approximately \$6,000,000, one-half of which will be paid by the state, is to begin by November 1, 1931, and to be completed by November 1, 1935, and is to be carried on jointly by both railroads, under a plan prepared by the Pennsylvania. This approved plan contemplates relocation of existing railway tracks between Arkansas and Missouri avenues, to provide the two railroads with adjoining rights-of-way. In connection with this relocation, the construction of new union passenger and freight terminals to replace present Atlantic City facilities is also being considered.

VIRGINIAN.—The contract for the construction to subgrade, exclusive of the superstructure for steel bridges, of Section F of the Guyandot line of the Virginian & Western, a Virginian subsidiary, has been let to the Nelson and Chase & Gilbert Company, New York. This section, which requires the construction of three tunnels and of substructures for two river bridges, as well as necessary channel changes, is an extension from M. P. 33.0 to M. P. 39.38 of a line now being built along the Guyandot river in Wyoming and Mingo counties, W. Va., to connect the Virginian at Elmore, W. Va., with the Chesapeake & Ohio at Gilbert. It was reported in the *Railway Age* of May 23 that bids were being received for the work described as being included in the present contract.

BECAUSE IT BELIEVES that in a movement to restore traffic to the railroads "a great deal can be accomplished toward the restoration of better business conditions," the Rockwell-Barnes Company, paper and paper specialties, of Chicago, is attaching a "Ship by Rail" sticker to every order which it sends out. This sticker reads as follows:

"Orders received from railroads make it possible to send this order to you."

"Transportation of more freight by rail will provide the need of increased quantities of merchandise and will produce the funds with which to pay for it. If you will see that your shipments move by rail you will assist in developing more and better business for all of us."

Weary Winter Miles

Across the wind swept prairie, through the snow filled passes where malemutes once mushed their loads, fast rail-born freight moves today on Gary Wrought Steel Wheels.



Illinois Steel Company

Subsidiary of United States Steel Corporation
General Offices: 208 South La Salle Street, Chicago

Financial

BALTIMORE & OHIO.—*Acquisition of Alton.*—Oral argument will be heard by the Interstate Commerce Commission on June 29 on this company's application for authority to acquire control of the properties of the Chicago & Alton.

CHESAPEAKE & OHIO.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire and operate a line from Beaver Junction to Flat Top, W. Va., 15 miles, now owned by the Blue Jay Lumber Company, which it proposes to purchase for \$166,000 cash.

CHICAGO & EASTERN ILLINOIS.—*New Directors.*—Kenneth D. Steere, a partner of Paine, Weber & Co., New York, has been elected chairman of the board of directors of the Chicago & Eastern Illinois, succeeding Thomas C. Powell, who has resigned effective July 31. Other new directors are Michael J. O'Brien, Hugo E. Otte, and C. Hyatt, replacing William C. Potter, Joseph R. Swan and Thomas D. Heed.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reduces Dividend Again.*—Directors of this company have declared a quarterly dividend of \$1 on the common stock. The payment last quarter was \$1.25, and prior thereto it was \$1.75.

COLORADO & SOUTHERN.—*Annual Report.*—The 1930 annual report of this company shows net income after interest and other charges of \$1,203,146, as compared with net income in 1929 of \$3,545,068. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Average Mileage Operated	2006.65	2003.48	+ 3.17
RAILWAY OPERATING REVENUES	\$20,666,912	\$26,116,202	-5,449,290
Maintenance of way	3,069,615	3,871,066	- 801,451
Maintenance of equipment	3,677,443	4,387,486	- 710,043
Transportation	6,975,690	8,226,628	- 1,250,938
TOTAL OPERATING EXPENSES	15,219,134	18,011,576	-2,792,442
Operating ratio	73.64	68.97	+ 4.67
NET REVENUE FROM OPERATIONS	5,447,778	8,104,626	-2,656,848
Railway tax accruals ..	1,412,980	1,744,114	- 331,134
Railway operating income	4,026,442	6,352,438	- 2,325,996
Equipment rents—Net	438,996	615,128	- 176,132
Joint facility rents—Net	161,533	175,321	- 13,778
NET RAILWAY OPERATING INCOME	3,425,912	5,561,988	-2,136,076
Non-operating income	361,224	393,547	- 32,323
GROSS INCOME	3,787,137	5,955,535	-2,168,398
Interest on funded debt	2,244,627	2,361,752	- 117,125
TOTAL DEDUCTIONS FROM GROSS INCOME	2,583,990	2,410,466	-173,524
NET INCOME	1,203,146	3,545,068	-2,341,922

ERIE.—*Omits Preferred Dividend.*—This company has omitted the semi-annual dividend of \$2 due on its second preferred stock. Regular dividends on the first preferred have, however, been declared.

FORT SMITH & WESTERN.—*Receivership.*—This company has been placed in receivership under an order issued by the Federal court at Fort Smith, Ark. Louis B. Barry, Jr., vice-president and general manager of the company has been named receiver. The receivership application was filed by the Central United National Bank of Cleveland, Ohio, trustee under the railroad's mortgage which secures a bonded indebtedness of \$3,500,000.

MAINE CENTRAL.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire the property of the Upper Coos and the Coos Valley, 55 miles of line, which it now operates under lease and which it controls through stock ownership. It is proposed to pay for the property \$1 and to assume the indebtedness.

MINNEAPOLIS, NORTHFIELD & SOUTHERN.—*Notes.*—The Interstate Commerce Commission has authorized this company to extend for from one to five years the maturity date of \$250,000 of 5-year convertible 6 per cent notes maturing on September 1.

MISSOURI PACIFIC.—*Supplemental Report In Unification Case.*—The Interstate Commerce Commission on June 2 made public a supplemental report in the proceeding in which it found that the lease by the Missouri Pacific of the properties of 22 of its subsidiaries would be in the public interest subject to certain conditions. The case was re-opened for further argument and the report now states that any order which it may make authorizing the proposed unification will be subject to the condition that the Missouri Pacific shall cause to be eliminated from the proposed lease of the International-Great Northern a paragraph by which it declined to assume liability under the contract with the city of Palestine, Tex., for the maintenance of shops and general offices at that point which has been a matter of litigation for many years. In the original report the commission had sought not to affect in any way the rights under that contract. Counsel for the Missouri Pacific had offered to maintain and increase the shop facilities at that point with an estimated payroll of \$105,000 a month. The commission held that the contract is a matter over which it has no jurisdiction but that this term of the lease is one it is unable to approve. The commission also stated that any authorization order will require that before it becomes effective the Missouri Pacific shall file its consent to and acceptance of a condition that, until the commission otherwise orders, it will maintain all existing through routes of traffic. Such a condition had been urged by the Kansas City Southern, the Missouri-Kansas-Texas and the Burlington-Rock Island. Commissioners Porter and Tate, although concurring, objected to the requirement as

to the Palestine contract. Commissioners Eastman and McManamy dissented on the ground that the unification as proposed amounts to a consolidation. Commissioners Mahaffie and Aitchison dissented on the ground of objections to the requirement that all routes be maintained.

NEW YORK CENTRAL.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority for an issue of \$3,094,000 or 4½ per cent equipment trust certificates, for which it proposes to invite bids.

OREGON ELECTRIC.—*Abandonment.*—This road has been authorized by the Interstate Commerce Commission to abandon 1,033 miles of track located in the city of Portland, Ore.

PENNSYLVANIA.—*Control of Lehigh Valley and Wabash.*—This company and the Pennsylvania Company have filed petitions in the Federal Circuit Court of Appeals asking for review and setting aside of the order of the Interstate Commerce Commission requiring the two companies to divest themselves of Lehigh Valley and Wabash stock. The Commission order was based upon its contention that the acquisition of the stock is in violation of the Clayton Act. The railroad avers that the Commission erred in not dismissing the complaint for lack of sufficient evidence, and that it erred in failing to dismiss the complaint as to the Pennsylvania Company for lack of jurisdiction. The court will hold a hearing on the petitions in its October term.

PEORIA & EASTERN.—*Annual Report.*—The 1930 annual report of this company shows net income after interest and other charges of \$58,236, as compared with net income of \$428,773 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Average Mileage Operated	211.44	211.44	.....
RAILWAY OPERATING REVENUES	\$3,554,899	\$4,141,163	-586,264
Maintenance of way	482,383	518,339	- 35,956
Maintenance of equipment	784,813	859,330	- 74,516
Transportation	1,527,020	1,671,468	- 144,448
TOTAL OPERATING EXPENSES	3,044,740	3,286,780	-242,040
Operating ratio	85.65	79.37	+ 6.28
NET REVENUE FROM OPERATIONS	510,158	854,383	-344,224
Railway tax accruals	230,431	244,976	- 14,545
Railway operating income	279,207	608,482	- 329,274
Equipment rents—Net Dr.	171,337	142,212	+ 29,124
Joint facility rents—Net Dr.	73,865	58,164	+ 15,700
NET RAILWAY OPERATING INCOME	34,005	408,104	-374,099
Non-operating income	41,890	38,250	+ 3,639
GROSS INCOME	75,896	446,355	-370,459
TOTAL DEDUCTIONS FROM GROSS INCOME	17,659	17,581	77
NET INCOME	58,236	428,773	-370,536

PITTSBURGH & LAKE ERIE.—*Annual Report.*—The 1930 annual report of this com-



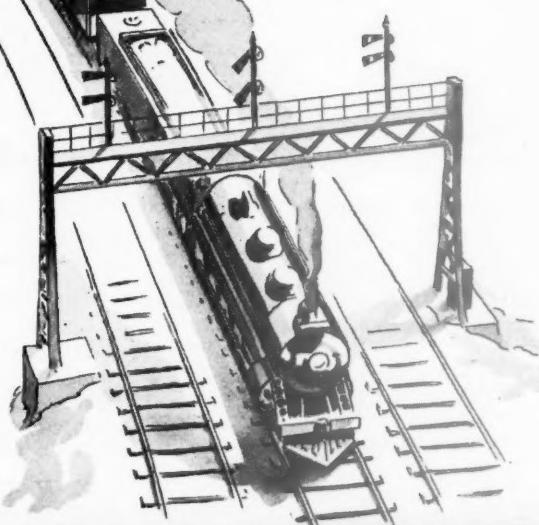
PROLONG *the life*
of **P**PIPE
exposed to
Atmospheric
Corrosion...

Steam lines, water lines, air lines, conduit and other pipe in railway service is continually exposed to atmospheric corrosion. That is to say, much of the deterioration of pipe used about locomotives, under freight and passenger cars, along the right-of-way and about terminals, is due to its exposure to alternate wet and dry conditions.

In the case of pipe used on rolling stock, it is often subjected to frequently changing climatic conditions resulting in condensation on the metal which intensifies corrosive action. For such service, Copper-Steel Pipe has a distinct advantage.

It is doubtful if there is any type of corrosion in which the advantages of Copper-Steel Pipe have been more clearly and conclusively proved than in railway service. In view of the longer service and economies assured, the extra cost is trifling. Let us mail you Bulletin 11, describing NATIONAL Copper-Steel Pipe—

The Original Copper-Steel Pipe



NATIONAL
COPPER-STEEL
PIPE



NATIONAL TUBE COMPANY
Frick Building, Pittsburgh, Pa.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

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pany shows net income after interest and other charges of \$6,510,198, as compared with net income of \$7,555,334 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Average Mileage Operated	232.01	231.27	+ .74
RAILWAY OPERATING REVENUES .	\$27,341,197	\$34,135,108	-6,793,910
Maintenance of way....	2,893,071	4,063,519	-1,170,447
Maintenance of equipment	7,812,470	11,924,608	-4,112,138
Transportation	9,319,352	10,978,383	-1,659,030
TOTAL OPERATING EXPENSES	21,530,951	28,396,025	-6,865,073
Operating ratio	78.75	83.19	- 4.44
NET REVENUE FROM OPERATIONS	5,810,246	5,739,082	+ 71,163
Railway tax accruals	1,693,586	2,117,333	-423,746
Railway operating income	4,116,421	3,621,584	+ 494,837
Equipment rents — Net Cr.	3,391,536	4,332,974	- 941,437
Joint facility rents — Net Dr.	134,839	63,018	+ 71,821
NET RAILWAY OPERATING INCOME ..	7,373,119	7,891,540	- 518,421
Non-operating income	1,280,642	1,467,331	- 186,688
GROSS INCOME	8,653,761	9,358,871	- 705,110
Rent for leased roads	590,314	620,559	- 30,244
Interest on funded debt	131,497	151,312	- 19,814
TOTAL DEDUCTIONS FROM GROSS INCOME	2,143,562	1,803,537	+ 340,025
NET INCOME	6,510,198	7,555,334	-1,045,135

RUTLAND.—*Annual Report.*—The 1930 annual report of this company shows net income after interest and other charges of \$274,521, as compared with net income of \$681,938 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Average Mileage Operated	413.03	413.03	.....
RAILWAY OPERATING REVENUES .	\$5,286,186	\$6,276,682	-990,496
Maintenance of way	952,734	1,164,389	-211,655
Maintenance of equipment	1,045,558	1,185,231	-139,672
Transportation	2,132,325	2,330,405	-198,079
TOTAL OPERATING EXPENSES	4,484,491	5,035,512	-551,475
Operating ratio	84.83	80.23	+ 4.60
NET REVENUES FROM OPERATIONS	801,694	1,241,170	-439,475
Railway tax accruals	274,297	337,744	-63,446
Railway operating income....	526,951	903,317	-376,365
Equipment rents — Net Cr.	15,553	36,333	- 20,780
Joint facility rents — Net Cr.	63,635	57,360	+ 6,275
NET RAILWAY OPERATING INCOME ..	606,140	997,010	-390,870
Non-operating income	108,600	130,883	-22,282
GROSS INCOME....	714,740	1,127,894	-413,153
Rent for leased roads	19,000	19,000	.....
Interest on funded debt ..	411,990	414,740	- 2,749

	1930	1929	Increase or Decrease
TOTAL DEDUCTIONS FROM GROSS INCOME .	440,219	445,956	- 5,736
NET INCOME....	274,521	681,938	-407,416

SPOKANE, COEUR D'ALENE & PALOUSE.—*Abandonment.*—This road has been authorized by the Interstate Commerce Commission to abandon a section of its line called the Hayden Lake segment, 1.65 miles, in Kootenai County, Idaho.

SUMPTER VALLEY.—*Abandonment.*—The Interstate Commerce Commission has denied this company's application for authority to abandon part of its line from Bates to Prairie City, Ore., 20 miles, without prejudice to its renewal after three years if it can show that its situation has not materially improved.

Dividends Declared

Atchison, Topeka & Santa Fe.—Preferred, \$2.50, semi-annually, payable August 1 to holders of record June 26.

Chesapeake & Ohio.—Common, 62½c, payable July 1 to holders of record June 8.

Erie.—First Preferred, 2 per cent, payable June 30 to holders of record June 15. Dividend on Second Preferred has been omitted.

Pere Marquette.—Common dividend omitted; Preferred and Prior Preference, \$1.25, quarterly, payable August 1 to holders of record July 8.

Reading Company.—Second Preferred, 50c, quarterly payable July 9 to holders of record June 18.

Average Prices of Stocks and of Bonds

	June 2	Last week	Last year
Average price of 20 representative railway stocks.	56.49	65.57	126.43
Average price of 20 representative railway bonds..	89.05	91.38	93.76

Railway Officers

OPERATING

P. F. Chryst, road foreman of locomotives on the Chicago, Burlington & Quincy at Lincoln, Neb., has been appointed road foreman-trainmaster on the Lincoln division at the same point.

K. V. Conrad and E. J. Tice, chief clerk to the general superintendent and superintendent of transportation, respectively, of the Norfolk & Western, have been appointed assistant superintendents of transportation, newly created positions.

The Wheeling division of the Pennsylvania was, on June 1, consolidated with the Cleveland and Panhandle divisions, and O. C. Schaad, who was superintendent of the Wheeling division, with headquarters at Wheeling, W. Va., has been appointed assistant to the general superintendent of the Eastern Ohio division at the same point.

J. J. Butler, superintendent of the Eastern division of the Chicago & Alton, and D. J. Deasy, superintendent of the Western division, both with headquarters at Bloomington, Ill., and R. T. Burdette, superintendent of terminals,

with headquarters at Chicago, have been appointed assistant superintendents with the same respective jurisdictions and with headquarters at the same points.

E. C. Gegenheimer, trainmaster of the Akron division of the Pennsylvania, has been promoted to superintendent of the Sunbury division, with headquarters at Sunbury, Pa., succeeding J. L. Gressitt, who has been transferred to the St. Louis division, with headquarters at Terre Haute, Ind. Mr. Gressitt succeeds R. P. Graham, who has been transferred to the maintenance of way department.

Following the consolidation of the First and Second divisions of the Oregon-Washington Railroad & Navigation Co. as the Oregon division, W. H. Guild, superintendent of the Second division, with headquarters at La Grande, Ore., has been appointed superintendent of the Oregon division, with headquarters at Portland, Ore. A. Buckley, superintendent of the First division, has been appointed assistant superintendent of the Oregon division, with headquarters as before at Portland. The name of the Third division has been changed to that of the Washington division.

H. P. Galbreath, assistant superintendent on the Missouri Pacific at Van Buren, Ark., has been transferred to the Southern Kansas division, with headquarters at Coffeyville, Kan. The jurisdiction of B. C. Murphy, trainmaster at Van Buren, has been extended to include the entire Central division. G. R. Mabie, trainmaster on the Southern Kansas division, has been transferred to the Memphis division at Wynne, Ark., and his former position has been abolished. E. L. Kimmel has been appointed trainmaster of the Missouri-Illinois Railroad, with headquarters at Bonne Terre, Mo., and his former position of trainmaster of the Illinois division of the Missouri Pacific at Bush, Ill., has been abolished.

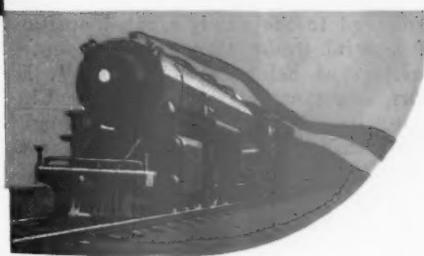
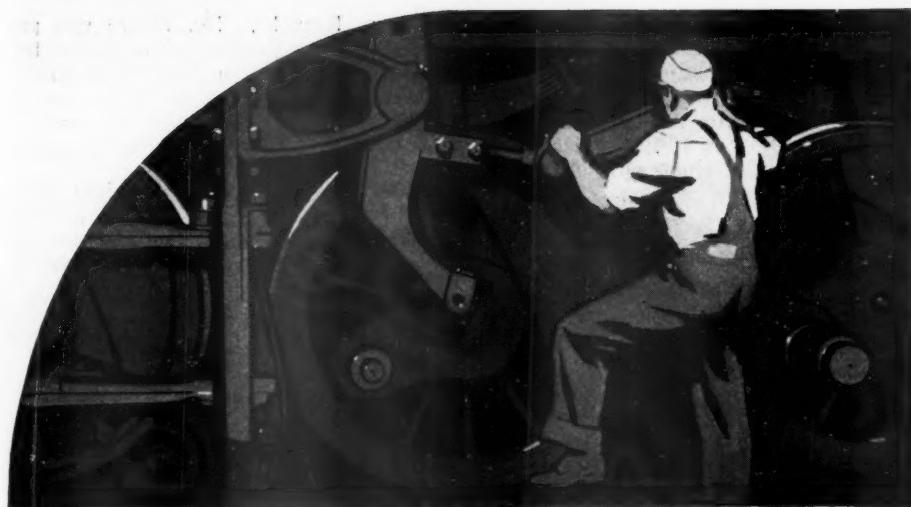
TRAFFIC

F. H. Pitman, assistant general freight agent of the Norfolk & Western at Roanoke, Va., has been appointed general freight agent at the same point, succeeding Oscar W. Cox, promoted.

C. M. Park, commercial agent for the Chicago, Milwaukee, St. Paul & Pacific at Cleveland, Ohio, has been promoted to general agent at that point, succeeding F. E. Clark, who will retire from active service on June 1.

S. D. Arnett, commercial agent for the St. Louis Southwestern at Pine Bluff, Ark., has been promoted to general agent at that point, succeeding Frank Pattie, who has been promoted to assistant general freight and passenger agent at Little Rock, Ark.

Edward J. Hilliard, livestock agent of the Canadian National at Montreal, Que., and Charles J. Pierce, general agent of the freight department at Boston, retired from the service of that road on June 1.



A LOCOMOTIVE is no Stronger than its Bolted Connections

NOT ONLY does a locomotive depend for its stability and performance on bolted connections, but the cost of keeping these connections tight is a serious item.

- By refusing to stretch after the nut has been wrenched home, Agathon Engine Bolt Steel is a big help in locomotive maintenance.
- Agathon Engine Bolt Steel has a higher elastic limit than iron, is free from slag pockets and seams, and possesses greater resistance to fatigue.
- Use Agathon Engine Bolt Steel wherever you are now using engine bolt iron. It reduces maintenance and actually costs less.



CENTRAL ALLOY DIVISION
REPUBLIC STEEL
CORPORATION
Massillon, Ohio

Both positions have been abolished and the duties formerly performed by Mr. Pierce will be carried on under the direction of the general freight agent at Boston.

S. P. Stringfellow, assistant freight traffic manager of the Seaboard Air Line, with headquarters at Atlanta, Ga., has been granted a leave of absence for one year on account of illness. **F. C. Cheney**, assistant general freight agent at that point, has been appointed acting assistant freight traffic manager and will take over the duties of Mr. Stringfellow during his absence. The position of assistant general freight agent at Atlanta has been abolished.

Charles C. Cameron, freight traffic manager of the Illinois Central, has been promoted to the newly created position of general traffic manager, with headquarters as before at Chicago. **V. D. Fort**, assistant traffic manager at Chicago, has been promoted to freight traffic manager, succeeding Mr. Cameron. **F. H. Law**, assistant freight traffic manager at Chicago, has been appointed assistant traffic manager to replace Mr. Fort.

As another step in the unification of its traffic solicitation, the Missouri Pacific Lines have placed their general agents of the freight department at Kansas City, Mo., Little Rock, Ark., Denver, Colo., Los Angeles, Cal., and San Francisco in charge of both freight and passenger departments at those points. They are **H. M. Johnson** at Kansas City, who was formerly general freight agent at that point; **H. R. Wilson** at Little Rock, who was formerly general freight agent at that point. **W. H. Fraser** at Denver; **J. D. Yates** at Los Angeles, and **W. M. Cook** at San Francisco. **I. G. Miller**, division passenger agent at Kansas City, has been promoted to general agent of the passenger department at that point. **M. S. Kitchen**, general agent at Wichita, Kan., has been appointed general agent of the passenger department at Little Rock. **J. L. Fisk**, assistant general passenger agent at St. Louis, Mo., has been appointed general agent of the passenger department at Omaha, Neb. **W. F. Miller**, division passenger agent at St. Louis, has been promoted to general agent of the passenger department at that point. **C. L. Shortridge**, assistant general agent at Birmingham, Ala., has been transferred to Los Angeles. **F. L. Orr**, general passenger agent at Kansas City, Mo., has been appointed assistant general passenger agent at San Antonio, Tex., succeeding **E. A. Farr**, who has been transferred to St. Louis in charge of colonization.

G. F. Butler, freight traffic manager of the Norfolk & Western, with headquarters at Roanoke, Va., has been appointed general traffic manager, a newly created position. Mr. Butler was born on August 24, 1877, in Richmond, Va. He first entered the service of the Norfolk & Western as messenger and clerk in July, 1891, in the office of the freight claim agent. In December, 1895, he became

clerk in the freight traffic department at Roanoke, being advanced to soliciting freight agent at Chicago in October, 1902. Mr. Butler became traveling freight agent, with headquarters at Roanoke, on October 1, 1907, later serving successively as chief rate clerk, chief

tion at Roanoke. Mr. Moore was promoted to the position of superintendent of transportation in July, 1917, serving in that capacity until the latter part of 1926, when he was further advanced to general superintendent of transportation.

Oscar W. Cox, general freight agent of the Norfolk & Western, with headquarters at Roanoke, Va., has been appointed freight traffic manager, succeeding **G. F. Butler**, promoted. Mr. Cox was born at Olive Furnace, Ohio, on February 13, 1879. He entered the service of the Norfolk & Western as telegraph operator and ticket agent at Columbus, Ohio, in February, 1897. In December, 1899, he entered the freight traffic department at that point as telegraph operator and clerk, being given a regular clerkship in May, 1903. Mr. Cox was appointed soliciting freight agent in May, 1910, then being advanced successively to the positions of traveling freight agent, chief clerk and commercial agent at Toledo, Ohio. He was appointed division freight agent in January, 1922, and in June of the same year he became



G. F. Butler

clerk to the general freight agent, and chief clerk to the freight traffic manager. He was appointed assistant general freight agent in December, 1917, and in June, 1922, became general freight agent. He was further advanced to the position of freight traffic manager in February, 1927, which position he held at the time of his recent promotion.

E. S. Moore, general superintendent of transportation of the Norfolk & Western, with headquarters at Roanoke, Va., has been appointed to the newly created position of coal traffic manager, with the same headquarters. The position of general superintendent of transportation has been abolished. Mr. Moore was born at Newport, Pa., on September 28,



Oscar W. Cox

coal freight agent. Mr. Cox was appointed general coal freight agent in May, 1925, serving in that capacity until February, 1927, when he was advanced to general freight agent, which position he held until his recent promotion.



E. S. Moore

1880. He was educated in the public schools and entered railway service as messenger for the N. & W. in 1895. Two years later he became stenographer in the office of the car service agent of that road and in 1903 he became chief clerk to the superintendent of transporta-

ENGINEERING AND SIGNALING

S. R. Negley and **G. L. Sealey** have been appointed assistant electrical engineers of the Reading Company, with headquarters at the Reading terminal, Philadelphia, Pa.

Schuyler M. Smith, assistant bridge engineer of the Wabash, with headquarters at St. Louis, Mo., has been appointed bridge engineer of the Missouri-Kansas, Texas, with headquarters at the same point, succeeding **R. M. Stubbs**, deceased.

L. V. Chausse, division engineer of the Second division of the Oregon-Washington Railroad & Navigation Co., with



BETTER FIRES

**FIREBAR CORPORATION
CLEVELAND OHIO.**

headquarters at La Grande, Ore., has been appointed division engineer of the Oregon division, with headquarters at Portland, Ore., following the consolidation of the First and Second divisions as the Oregon division.

R. P. Graham, superintendent of the St. Louis division of the Pennsylvania, with headquarters at Terre Haute, Ind., has been appointed engineer, maintenance of way, of the Central Pennsylvania division, with headquarters at Williamsport, Pa., succeeding **D. P. Beach**, who has been promoted to assistant chief engineer, maintenance of way, of the Eastern region, with headquarters at Philadelphia, Pa.

George I. Wright, engineer of electric traction of the Reading, with headquarters at Philadelphia, Pa., has been appointed chief electrical engineer, with the same headquarters. In his new capacity Mr. Wright will be in charge of electrical engineering, signal engineering, electric traction engineering and maintenance, other than rolling equipment, power supply, wire crossings and occupations. Mr. Wright was born on July 12, 1889, in New Jersey. He was graduated from Leland Stanford University, Palo Alto, Cal., in 1913. He entered railway service in May of that year on electrification of branch lines on the Portland division of the Southern Pacific, although

1922, Mr. Wright was employed successively by the McDougall-Duluth Shipbuilding Company, Duluth, Minn., as assistant superintendent and as assistant engineer on the Illinois Central (Chicago Terminal Improvements) in connection with the electrification of suburban lines. He was promoted to office engineer in January, 1923, and was further advanced to the position of assistant electrical engineer of the Chicago Terminal Improvements in January, 1927. In August, 1927, he was appointed engineer of electric traction for the Reading Company, the position he held at the time of his recent promotion.

MECHANICAL

H. J. McCracken, master mechanic of the Stockton division of the Southern Pacific at Tracy, Cal., has been appointed assistant master mechanic of the Salt Lake division at Sparks, Nev.

A. C. Johnson has been appointed master mechanic of the Pensacola division of the Louisville & Nashville, with headquarters at Pensacola, Fla., succeeding **J. E. White**, who retired from active service on June 1.

Thomas F. Sheridan, chief clerk to the superintendent of motive power of the Pittsburgh & Lake Erie, has been promoted to assistant to the superintendent of motive power, with headquarters as before at McKees Rocks, Pa.



George I. Wright

previous to that time he had been employed for a year as electrician's helper and meter tester with the Portland Railway, Light & Power Company, Portland, Ore. Mr. Wright served on branch line electrification on the Portland division and on other parts of the Southern Pacific as an electrician, as sub-station operator, as draftsman and as general foreman of electrical construction until May, 1917, when he was advanced to assistant engineer. In November, 1917, he enlisted as a lieutenant (junior grade) in the U. S. Navy, Naval Reserve, and during the World War served as an electrical officer on the U. S. S. "Montana" and in charge of the installation of electrical equipment in connection with the construction of submarines at the Portland Navy yard. From 1919 to

to that date chief engineer of the commission, died at New Haven, Conn., on May 21, at the age of 74. Mr. Elwell, who was a native of Belfast, Me., entered railroad engineering work in 1882, with the New York & Boston (now part of the New York, New Haven & Hartford), subsequently serving with the Wilmington & Delaware, the Baltimore & Ohio, and the New York, New Haven & Hartford.

Loren F. Vosburgh, vice-president in charge of passenger traffic of the New York Central at New York, died of heart disease at his home in Mount Vernon, N. Y., on May 31. Born on April 7, 1868, at Adrian, Mich., Mr. Vosburgh entered railway service in 1893, with the Lake Shore & Michigan Southern (now the western part of the New York Central main line). From 1893 to 1895 he served as assistant night agent of the L. S. & M. S. at Adrian. In the latter year he became assistant ticket agent at Chicago and in 1897 was made city passenger agent, a position which he held until 1903. From 1903 to 1906 he served as general western passenger agent of the Lake Shore & Michigan Southern, and in 1906 became general eastern passenger agent of the New York Central lines at New York. From 1910 to 1917 he was assistant general passenger agent and general passenger agent of the New York Central & Hud-

PURCHASES AND STORES

E. J. Becker, traveling storekeeper of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to district storekeeper, with headquarters at El Paso, Tex., succeeding **L. G. Pearson**, deceased. Mr. Becker will also act as division storekeeper of the Rio Grande division.

OBITUARY

William H. Gilman, vice-president in charge of operation of the Santa Fe Northwestern and the Santa Fe, San Juan & Northern, with headquarters at Bernalillo, N. M., died at his home in that city on May 25, following a paralytic stroke. Prior to his election as vice-president in 1930, Mr. Gilman served as master mechanic of the Santa Fe Northwestern.

Richard M. Huddleston, who served as general auditor of the New York Central, lines west of Buffalo, N. Y., with headquarters at Chicago, from 1910 to 1918, died at Cleveland, Ohio, on May 31. For various periods he was general auditor of the Michigan Central, the Cleveland, Cincinnati, Chicago & St. Louis, the Pittsburgh & Lake Erie, the Indiana Harbor Belt and eight companies which are now a part of the New York Central Lines.

Charles C. Elwell, a member of the Connecticut Public Utilities Commission since 1915, and for four years prior



Loren F. Vosburgh

son River and the West Shore, both of which are now part of the New York Central. In 1917 he became passenger traffic manager of the same roads, assuming at the same time the duties of general passenger agent of the New York Central. He later became passenger traffic manager for the New York Central and in 1920 traffic manager, which position he held until February 1, 1930, when he became vice-president in charge of passenger traffic, with headquarters at New York. Since August, 1922, Mr. Vosburgh had also acted as traffic manager of the Toledo & Ohio Central, the Kanawha & Michigan, the Kanawha & West Virginia and the Zanesville & Western (all subsidiaries of the New York Central Lines).